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# THE RELATION OF THE CITY TO ITS FOOD SUPPLY

REPORT OF A COMMITTEE OF THE  
NATIONAL MUNICIPAL LEAGUE

NOVEMBER 19, 1914

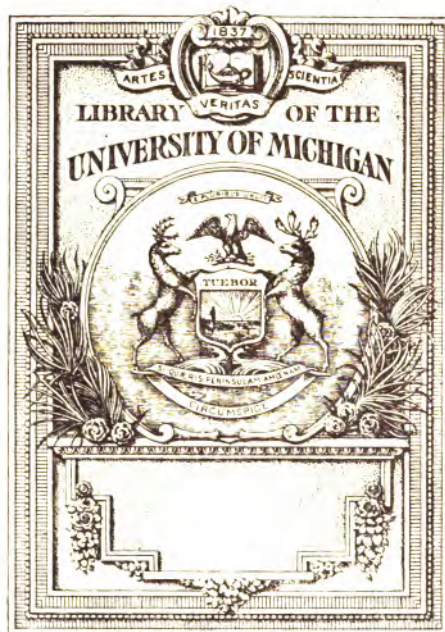
BY

CLYDE LYNDON KING, Chairman, University of  
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sylvania Farmer"; H. B. FULLERTON, Agriculturist,  
Long Island Railroad Company; CTRUS C. MILLER,  
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N. Y.; PAUL WORK, Cornell University, N. Y.

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# THE REPORT OF THE COMMITTEE

## ON THE

### RELATION OF THE CITY TO ITS FOOD SUPPLY<sup>1</sup>

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The relation of the twentieth century city to its food supply differs in practically every prime essential from the relation of the nineteenth century village to its food supply.

The marvelous development of trans-continental and oceanic freight facilities has made the world the city's garden patch and the sea its harbor. The development of cold storage and warehouse facilities has placed the city nearer to the farm a thousand miles away than was the farm within sight of the city's buildings a quarter of a century ago. The information as to crop and harvest conditions, secured by wholesale commission houses, has led to stability in wholesale price and has placed the surplus output of every region and practically every clime at the beck and call of the city dweller who can pay the price. The practice of diversion of shipments, or selling in transit, by which a carload of grain or produce can be diverted en route to a point where local prices are higher than at the point of original shipment, is symbolic at once of the fluidity and stability of the twentieth century food supply.

The big fact about the food for the twentieth century city is the diversity of its supply. This diversity in food supply means that a city can now be located wherever specialization warrants without suffering from untoward prices or other dangers formerly inherent in distance from the base of supply. This diversity means, too, not only specialization in cities, but specialization in farming countries as well. And, finally, diversity in food supply means choice of foods and consequently a more satisfying, even though more costly, daily urban life.

While this diversity in food supply has its definite advantages, its disadvantages must not be overlooked. First and foremost, this diversity has tended to cause urban dwellers to under-estimate the value to the city of having a prosperous and productive agricultural country round about. When producers go elsewhere, agricultural

<sup>1</sup> The Committee is under special obligations to Mr. Samuel S. Fels, of Philadelphia, whose financial support made possible certain investigations. The Committee is also indebted to Mr. Charles J. Brand, Chief of the National Bureau of Markets.

land values go elsewhere; and when agricultural land values go elsewhere, purchasers and purchasing power soon accompany them. No city is so wealthy nor the purchasing power of the rank and file of its citizens so ample that it can afford to be heedless of the purchasing power of nearby communities, nor heedless of the high food costs incident to buying, transporting and selling foodstuffs grown at a distance. The greater the distance the city is from its base of supplies, the greater, as a rule, will its food costs be and this not because transportation charges are higher, for that does not follow of necessity, but because the system by which distant food supplies are handled must necessarily be more complex and must require more men—who must be paid, and more risks—which must be compensated—than the nearby supply.

To secure minimum food costs in cities is, therefore, the twofold problem of (1) securing all the advantages of world-wide markets at minimum distribution costs, while (2) keeping in close and intimate touch with the producing territory round about.

The basic elements of a constructive city program for lower food costs may be classified as: (1) The problem of securing standard grades of produce on the farm at the time of shipment; (2) the problem of transporting that produce from the farmer's gate to the city retailer or consumer; (3) the minimizing of distribution costs within the city.

These three problems, while simple in statement, are different for every city and their ramifications are most diverse and complex. Each city must consider its own problems and solve them for itself. There is no one panacea for the solution of lower food costs; and means adaptable to one city for getting into closer touch with the farmers round about, while keeping in the most economic relation with a diversified food supply, are not, necessarily, adapted to another.

### THE NEED FOR STANDARDIZATION.

The rapid increase in land values<sup>1</sup> and the rise in the cost of farm labor indicate very definitely that production costs will probably increase in the future.

The city may be able to do something effectively in lowering production costs to the farmer. This can be done through encourag-

<sup>1</sup> During the decade between 1900 and 1910, the value of all farm lands in the United States increased from \$12,058,000,000 to \$28,476,000,000—equivalent to 118.1 per cent. During this



ing intensive farming, co-operative buying by farmers, and by disseminating information as to farm management, seeds, soils and other essentials to scientific agriculture. But the city's own problem is the distribution problem.

If the city is to lower the farmer's marketing costs and feed its residents with food routed in a way leading to maximum conservation and minimum costs, it must interest itself definitely in the grading, packing, sorting and standardizing of food products on the farm. It may seem a far cry from city food costs to the standardization of foods and packages but the relationship is most definite and intimate.

The chairman of this committee asked the 246 members of the Vegetable Growers' Association of America to state the advantages that would accrue to them and to dealers and consumers through the standardization of foodstuffs and packages. Some of these advantages given by the growers were: Lowering of costs; convenience of handling; the saving of time; producer and consumer know what they are giving and getting; enables the grower to quote correctly in order to meet competition; the goods are more wisely handled; better satisfaction is given and buying and selling are made easier by having one price for each grade of goods.

Mr. Paul Work, Superintendent and Instructor in the Department of Vegetable Gardening in the New York State College of Agriculture, Cornell University, and a member of this committee, states the need for and the advantages of the standardization of packages for the marketing of vegetables as follows:

"All business is based upon mutual understandings. Misunderstandings underlie a large proportion of business difficulties of all sorts, ill feeling, losses, and failures. An understanding is possible only when the meaning of terms is clear as between parties. It has been long evident that the situation as regards packages for vegetable handling is most unsatisfactory. A perusal of the quotation columns of a market periodical like *The New York Packer* reveals the fact that prices are stated in terms of quantities, containers, and measures which are very frequently incomparable. As a result, these quotations are well-nigh

period the following increases in land value are shown for the various states: Minnesota, 82 per cent; South Dakota, 377 per cent; Florida, 204 per cent; Oklahoma, 334 per cent; California, 108 per cent; Illinois, 104 per cent; etc. Nearing—"Increases of American Land Values."



unintelligible, save to one who gives his whole time to the produce trade. The grower and the retailer who are interested in knowing market conditions as they exist throughout the country find these columns of much less value than they should be.

"The diversity of packages results in innumerable misunderstandings. A retailer orders a certain number of hampers of beans expecting bushel hampers which he has been receiving from day to day. The wholesale merchant has been handling both bushel and half-barrel hampers. A clerk, perhaps with no way of knowing the grocer's customary requirements, or perhaps through sheer carelessness, sends half-barrel hampers. The grocer finds himself with fifty per cent more beans on his hands than his trade calls for. Loss and disagreement with the wholesaler are the result.

"Even more insidious are the losses due to differences in packages under the same name which are not conspicuous to the eye. Celery crates that are in common use differ in each of the horizontal dimensions by one inch or more. This minimum difference would not be noticed unless the crates stand side by side, but it is sufficient to make a difference of a dozen stalks more or less in its capacity. As a result of this condition, either one grower is consciously or unconsciously giving short measure or another grower is suffering the loss of approximately eight per cent by using an over-sized crate.

"These are mere examples of conditions which have appeared through general observation and through investigations such as the report by Mr. M. H. Schonour for this committee.

"Standardization results, where it is in force, in a very material saving in the original cost of packages. The smaller the variety of containers which are manufactured, the greater the economy of production. This applies to the packages which are used on local markets as well as those which are shipped. The Cleveland market has for years been accustomed to the use of returnable crates and boxes, most of them holding approximately a bushel. Formerly each grower designed his own box and had his

material sawed out to order in a lumber mill. When John Jones needed fifty crates, the mill man found it necessary to adjust his machinery for this small order and then re-adjust it for the next job. The growers, through their local association, decided upon standard dimensions. Thereafter the box manufacturers were able at slack times to saw out a large quantity of stock material and then, when Mr. Jones came for twenty-five crates, it was necessary only to take the pieces of the various kinds from their piles and load them on the wagon without interruption of the other work that was being carried on. This resulted in a very material reduction in the cost of the boxes.

"Standardization means greater convenience in packing produce and particularly in loading in cars. When unstandardized boxes are to be loaded on a car, an economical plan must be worked out for each type, and the loading of mixed cars results in considerable inconvenience and loss of time with consequent increased expense.

"So far I have spoken of the direct advantages of standardization in itself. Standardization will necessarily mean considerable changes in the forms and dimensions of containers now in use. These changes should always be made not merely with the idea of securing uniformity but with the idea of securing better packages as well. Many of the containers now in use are not well adapted to the crops which are packed in them. Cauliflower, for instance, is widely sold in barrels. This is one of the most delicate and most fancy vegetables with which we have to deal. Yet it is packed in second-hand barrels which have already made one or more trips to market. The barrel does not show the contents to advantage, and it encourages no end of rough usage; for the barrel represents the strongest form in which a given amount of wood can be fashioned into a container of a given capacity. The better growers are turning to the use of crates of various sorts which are much better adapted to the marketing of this high grade product.

"There is wide variation of form and construction in packages of given dimensions. The points to be borne in mind in this connection are protection for the contents,

strength, and cost. Various arrangements of solid and framed ends, the use of corner posts, the nailing and stitching of material, and the use of hoops and braces must all be considered.

"For the marketing of high grade produce, there is a distinct tendency toward the smaller sizes of packages. This results in better protection for the contents and to an increasing extent does away with the necessity of handling the contents before they are delivered to the consumer. In other words, a 'farm-to-family' package is desirable whether it is shipped directly or whether it goes through the hands of middlemen. The repacking and sorting of vegetables on the part of the various middlemen invariably result in loss which falls eventually upon either the producer or the consumer.

"It would be hard to find anyone to disagree with the idea that standardization of packages for vegetable marketing is thoroughly desirable, but there would be no difficulty in finding those who would hold that the proposal is thoroughly impractical. It may be granted at once that standardization can be reached only through years of gradual progress. Probably the most important factor in this progress will be education, directed particularly toward the producers of the crops but also toward the manufacturers. While those who supply packages to the growers furnish the types that are demanded, yet they are constantly working toward the reduction of the number of lines which they must carry. Growers are giving more thought every year to their packages. When this thought is undirected, it results in diversification rather than standardization, because every man's ideas are different from those of his neighbor. Accordingly, the intervention of some central agency or agencies is absolutely necessary. There must be a clearing house of some sort or other. This is a problem for a national organization rather than for state or local groups. The Vegetable Growers' Association of America would be the logical body to undertake this work in connection with the work which it has already begun with regard to weights and measures. A bureau of standardization for packages might be established. The

first task would be to secure from some source or other full and accurate data regarding the packages which are now in use. This would involve a vast amount of study of the type which Mr. Schonour has carried forward for a limited district and for a certain season.

"When the time comes for the promulgation of standards, it must be borne in mind that great flexibility will be required. Conditions in producing centers and conditions on markets vary almost infinitely, and it will never be possible to bring the list of approved containers down to very small limits, although the elimination of many of the present types will be possible. Perhaps the best method would be the method of registration. Thus, if a manufacturer or grower proposed the use of a new package and desired the approval of the bureau, he would submit his plans and his dimensions. If it were clear that this variant package would be useful under a certain set of conditions, registration would be granted; if, however, it were found that some other package were practically identical with an insignificant difference in dimension, the bureau would recommend this slight change. Accordingly, instead of an indefinite number of crates carrying two dozen heads of lettuce, we should need but three or four constructed to accommodate the various sizes of heads which are always to be found. For melons we would perhaps have three or four different sizes of crates designed to carry forty-five melons, as does the Colorado crate of the present. Then there would have to be a few standard sizes of flat crates. It must be borne in mind that we are dealing with the products of nature, and these products can never be standardized in the way that products of the factory are standardized.

"Such a bureau could gain its authority only from the intrinsic worth of its work and the willingness of the growers to recognize its value and to be governed accordingly.

"Legislation may eventually play a part in the advancement of standardization. Any laws that may be enacted should, however, represent not an effort to force the ideas of a single group upon the other interested groups

without due consideration of their requirements, but rather should represent the agreement of the best thought which is to be found among producers, transportation men, middlemen, and consumers. The violent disagreements incident to the enactment and enforcement of legislation are usually due to a failure to observe this principle. Those who have the broadest viewpoint and the soundest judgment and the highest respect of their colleagues, no matter in which of these fields they are engaged, can usually come to an agreement regarding measures that will be best for all concerned."

An examination of the appended report on "Vegetable Packages in Eastern Markets" will emphasize the need for standardization if such emphasis be needed. Efficiency and economy will never be attained in food distribution so long as beans are shipped in bushel hampers, five-eighths bushel baskets, barrels, bushel boxes, one-third bushel boxes and burlap bags; and lettuce by bushel hampers, five-eighths bushel baskets, crates, Boston boxes, sound stave baskets, hamper baskets or crates as fits the fancy of the grower or the tradition of the local market. The growing, selling, shipping, buying, retailing and consuming of goods will approach a science only when state and nation-wide standards are adopted in grades and in packages.

Standardization in grades and packages is a problem that the city must interest itself in if the economies and advantages accruing therefrom are to be vouchsafed to its residents. This means, among other things, the encouragement of co-operative selling by outlying farmers, for no other agency has as yet been devised which indicates so clearly to the farmers themselves the advantages of standard packages and goods *sans* misstatements and questionable practices as does co-operation. The nationalization of the market means the nationalization of the product and the package. Such nationalization based on local usages can be secured by (1) the co-operation of the growers themselves, (2) activities of city market bureaus which will inform their growers round about of the standard needs of that particular city, (3) activities of state market and weights and measures bureaus, and, finally, (4) by national standardization through the national bureau of markets and national legislation.



## FOOD TRANSPORTATION

The city's food transportation problem can, for sake of discussion, be best classified as (1) steam railway facilities with special reference to terminal facilities within the city; (2) the frequency of market trains and the adequacy of refrigerated cars and trains; (3) the extended use of the five billion dollars invested in electric trolley lines in this country for a more direct, efficient and economical distribution of food produce; and (4) better agencies for local distribution such as good roads, encouragement of shipments by parcels post and express, the development of waterfronts and navigable streams, and extended use of the motor truck.

In answer to the question referred to the members of the Vegetable Growers' Association of America, as to practical changes needed for shipping facilities, several indicated that their greatest need was for more facilities for direct marketing. Still others indicated a need that is unquestionably prevalent over the country: better roads. Many indicated their need for facilities for reaching wider markets, such as more icing stations; greater facilities for refrigerator cars; better train service, with trains running on time so that the vegetables would not reach the market "six or eight hours late", for that day's market "and, therefore, must lay over a day"; motor trucks, and trolley freight. Co-operation among the growers in their shipments was urged in order that wider and more distant markets could be reached. Others urged more reliable fast freight service, and "the gentler handling of express shipments and prompt delivery of freight."

*Trolley Freight*

The Pittsburgh & Butler Railway Company submits the following as the cost to the commission merchants from the time the company receives the produce at the shipping point until it is delivered into their hands; for articles in group No. 3, the average mileage haul into Pittsburgh.

<i>Articles</i>	<i>Frt. chg. per ton</i>	<i>Dray delv. per ton</i>	<i>Total</i>
Vegetables N. O. S.....	\$1.80	\$2.00	\$3.80
Beets.....	1.80	2.00	3.80
Celery.....	1.80	2.00	3.80
Corn.....	1.80	2.00	3.80
Potatoes.....	1.50	2.00	3.50
Tomatoes.....	1.80	2.00	3.80
Rhubarb.....	1.80	2.00	3.80
Cabbage.....	1.50	2.00	3.50
Apples.....	1.80	2.00	3.80
Berries.....	2.70	2.00	4.70
Grapes.....	1.80	2.00	3.80
Melons.....	1.80	2.00	3.80
Peaches.....	2.70	2.00	4.70
Pears.....	1.80	2.00	3.80
Milk (per gallon).....	.02	.09½	.11½
Poultry (alive).....	3.60	2.00	5.60
Eggs (per doz. on ton basis).....	.154	.17	.325

The drayage delivery cost per ton includes only the drayage cost from the freight station to the houses of the commission merchants and does not include the drayage cost to jobber or to retailer or any drayage cost after the produce has been sold to the commission men.

The features of trolley freight that make it especially significant to cities are:

1. A low cost of farmer's haul to station because of frequent stops at small outlay.
2. Regions are tapped inadequately served by other carriers, thus placing many farmers several hours nearer the city's markets.
3. Produce can be shipped in small quantities, thus giving a new avenue for marketing the surplus of small farmers and focusing attention upon the nature of the output of all farmers.
4. Goods can be marketed in a fresher condition, thus giving the consumer better goods and the farmer better prices.
5. Shipments reach sections of the city not reached by railroad terminals, thus making possible the distribution of food products to the needier sections of the large city and exactly to the market center in the small city.
6. Facilities for getting the output of manufacturing establishments to railroad stations, and from the city to outlying suburbs and farmers, are increased, thereby enhancing both urban and farm values.

Mr. Samuel S. Fels, one of the leading manufacturers of Philadelphia, not only is convinced of the value of the development of



trolley freight, but believes in addition that the trolley freight companies can, with profit to themselves and more especially to consumers, undertake the added function of acting as well as agent for the producing regions on their lines. On this point Mr. Fels says:

"In the United States trolley freight thus far has been developed primarily along lines of bringing in such produce as the farmer cared to ship in that way, leaving the farmer to sell through traditional trade channels. No constructive policy has been devised that relieves the farmer of taking the time necessary to find his market and sell his produce, or that utilizes, to anything like their maximum possibilities, the power and equipment of the traction lines not in use from eleven or twelve o'clock at night until five or six in the morning.

"A virile constructive program for the maximum development of trolley freight would mean that the company would: (1) Instruct the farmers in packing and sorting their produce for the market of the particular city to which they are to ship; (2) Fix the grades of produce to be put into the various containers; (3) Standardize the containers in which such produce would be shipped; (4) Assume the responsibility for selling all produce sorted, graded and packed as specified by the company.

"By these means, the traction company would effectively:

"(a) Standardize produce so that it could be fitted for direct shipment to the wholesaler, the retailer and the consumer respectively.

"(b) Through a specialized selling department, could find a better market than the farmer could ever be sufficiently expert to find.

"(c) Save the farmer the trouble, the expense and the time incident to marketing his produce.

"(d) Make possible the disposal of an over-abundance of a particular commodity, such as sweet potatoes or onions, either by collecting these into carlot shipments to other markets or by advertising in the newspapers that a choice lot of such and such an article could be had on that day at prices quoted.

"(e) Open the way for lower food costs through lower distribution costs.

"By this plan the farmers would have to put up their goods in a method adapted to the market and in containers which met the standard fixed by the traction company. The company could, in effect, thus force the farmers to standardize their packages instead of waiting until they did so of their own volition. Farmers who did not do this would soon learn that their produce did not bring top prices. Moreover the containers could be furnished by the company at small cost, because bought in large quantities, and could be used over and over again, to the more efficient utilization of invested capital. The company would receive the produce offered by all shippers, to be sure, but it would offer special selling advantages to those farmers who shipped in the method and by the standards laid down by the traction company. The express companies are now working out such a plan.

"Freight distribution by trolley lines is also capable of vast development in the distribution of freight from the steam terminal to the particular section of the city where needed. Just as the trolley in the country can stop from farm to farm, or at least every two or three miles, so in the city there could be a goodly number of freight terminals, at relatively small expense, to which could be sent, not only the produce shipped from the outlying country, but also the packages and freight en route to steam terminals."

The principle underlying Mr. Fels' recommendation has been partially put in practice by certain of the trolley companies. Thus the Lehigh Valley Transit Company has a Commission and Order Department which assists the farmers in finding buyers for their goods and assists commission merchants in locating produce. The objection that arises at once to the extended functions of trolley lines, suggested by Mr. Fels, is the advisability of extending the functions of transportation companies, so as to include other vital public duties than transportation. As a rule, the trolley companies that carry small shipments for farmers have the full confidence of the farmers. The success of Mr. Fels' suggestions hinges

on the continuance of this confidence. But we have not yet secured, in many places, the confidence between trolley companies, on the one hand, and farmers and city residents, on the other, that would be essential to the well working out of this scheme. Mr. Fels' answer to this objection is that the company's sincerity would be judged by its success. If the farmers did not actually secure more through these channels, at greater convenience, than they could secure through other channels, they would naturally not patronize the company, and, if retail buyers or consumers did not get satisfactory service and prices, they, too, would buy elsewhere.

Whether or not the extended function suggested by Mr. Fels is granted to trolley companies, certain it is that their greater development for the handling of less than carload shipments and for freight distribution within the cities is the most significant step that can be taken by cities for assuring a more efficient distribution of foodstuffs. No testimony speaks more glowingly of the possibilities of trolley freight than do the facts as to the increase in receipts therefrom by the companies themselves. The freight receipts to street and electric railways in the United States increased from \$1,038,097 in 1902 to \$10,165,616 in 1912 and the receipts from carrying baggage, express and milk in addition increased in the same decade from \$401,672 to \$3,687,947. During this period the total operating revenue increased from \$247,553,999 to \$567,511,704.

#### LOWER URBAN DISTRIBUTION COSTS

The third big problem has to do with lowering urban distribution costs, for it is after the food has reached the city that the major portion of food costs are piled up. Many studies have been made as to the various cost factors in food distribution. These all agree in showing that food costs are doubled after the food has reached the city. Typical of the price accumulations shown by these various studies are the examples given to the chairman of this committee by the leading vegetable growers of America of prices paid by consumers as compared with the prices received by the growers for specific grades of produce on specific dates. One grower says that, on a Saturday in July, he went around among the retailers of Philadelphia to see what the consumers were paying for lettuce and beets. He found the prevailing price to be around 5 cents per head or bunch. On the same date, he received less than half a cent for

lettuce and 75 cents per hundred for beets. Green house lettuce, for which another grower received from 3 to 5 cents, was retailed for 15 cents. Tomatoes were sold by the grower in July at 10 cents a pound, and retailed the same day at 15 or 20 cents a pound. Asparagus for which the grower received 12 cents in June retailed at 22 cents; celery, for which the grower received 20 to 25 cents, was sold by the retailer at 40 cents; oranges, sold at  $8\frac{1}{2}$  cents a dozen, were retailed by the dealer the same day for 20 cents a dozen. Some general statements were that "the retailers make 65 per cent"; "the difference in price between what the consumer pays and what the producer gets ranges from 100 to 300 per cent"; and that "the consumer nearly always pays the usual price no matter how much the grower gets."

The cost of items added to each of the various steps in the distribution process was given in typical cases as follows: "I bought apples from the farmers at 40 to 50 cents a bushel, and packed them in bushel lots with covers, at a cost of 15 cents; express to Danville was 40 cents; freight, 34 cents per 100 pounds; the wholesaler received a commission of 10 cents, and sold to grocers at \$1.00 per bushel. The grocer retailed them at \$1.50 per peck, or \$2.00 per bushel." This grower adds: "I fear the commission men charged 10 cents for selling at \$1.00, but really sold at \$1.25, as 10 cents would not let him out whole and deliver to stores." Another grower received, on September 14, 15 cents for a box of celery. To this a cost of 3 cents per dozen was added for express, and 22 cents for retailer's profit, the box being sold to the consumer at 40 cents, an increase of 166 per cent over the producer's prices. One grower received 10 cents per pound for greenhouse lettuce, the commission and shipping added 2 cents per pound to the cost to the grocer, who sold it at 18 to 20 cents. Another grower itemized his shipping expenses as follows: Freight to New York, 10 cents per barrel; cartage, 12 cents; cost of barrel, 40 cents; total 62 cents per barrel.

One of the professors of economics of the country has recently stated that this price accumulation is no more remarkable than that a box of matches can be bought for five cents; that both are matters to be wondered at, to be sure, but nothing is to be done about them. But if half the residents of cities were paying half their incomes for matches, we would be definitely interested in making inquiry as to whether or not, after all, the number of matches in a box is so extraordinary, and whether the number

might be increased, or the price diminished, through proper civic action.

The "middleman" some have held to be responsible for all these added urban costs. It is, therefore, well to inquire here just who this middleman is and what functions he performs. There is first of all the country buyer who locates the produce, assembles it into carload lots, chooses the best market and finds a buyer. His are the risks of falling prices, farmers' misrepresentations and deterioration. The wholesale receiver handles produce, as a rule in car or train lots. He locates quantities in the country and hunts buyers, usually the jobber. He inspects goods, and repacks and resorts them for the trade. He often furnishes credit and advances money. Indeed, 90 per cent of the farm produce is marketed on borrowed funds, a large portion of which is obtained through the middleman, usually the wholesaler or jobber. The jobber breaks up carlots and sells to retailers. He is the specialist in what retailers want and wholesalers have to sell. He must often sort and repack to suit the retailer. He is the agent through which retailers get exactly the grade and quantity of produce suited to their needs. Both the jobber and the wholesale receiver must take the responsibilities for the conservation of their foodstuffs whether by cold storage or other means. The organizations of commission men and jobbers in the various produce exchanges of the country have distinct functions, such as formulating the ethical and business standards for their members, establishing grades, and often passing upon excess charges and other irregularities of their members. The functions of the retailer are so evident as to need no mention here.

It is apparent, therefore, that, under present usages as to sorting, packing, standardizing and conserving food products, all four types of middlemen—the country buyer, the wholesale receiver, the jobber and the retailer—will long be with us.

It is a good maxim of social efficiency that costs can best be lowered through giving every facility to business men, and through existing business channels. If prices will not ultimately be lowered through lowering actual costs, then the case is indeed hopeless. Moreover it may safely be assumed that, if costs could have been and can be lowered, business men would long since have garnered in these savings. That is just what has happened. The significant fact of the last two decades has been that the various types of business men engaged in the handling of produce—the farmer, the coun-

try buyer, the wholesale receiver, the jobber, the retailer—are enlarging their business units so as to include all or several of the steps in distribution. The farmer is now selling more largely, whether singly or co-operatively, to the retailer or consumer, the country buyer to the retailer and consumer; the commission merchant is turning jobber and buying direct from the farmer in order to sell to the retailer; the retailers are buying from the farmers direct and the cash-buying jobber is rapidly displacing the old type of country store-man as the country buyer, and he, too, is selling as directly as possible. While each of these types of middlemen will long persist, food prices in the future, therefore, will not be based, as they now are, on the cost of routing food through all of these classes. The route is definitely to be shortened.

This tendency is reflected in the answers sent in by the vegetable growers. Of the 183 who reported, 5 sold directly to retailers, and 22, or 1 out of 8, to consumers. It certainly comes as a matter of news to city dwellers that nearly one-half of the vegetable growers in this association sell either to retailers or consumers. Nor are the vegetable growers limiting themselves to any one of these five outlets for their goods. Thus, of the 183 who responded, 17 sold to all five, that is, to wholesaler, cash-buying jobbers, local purchasers, the retailer and the consumer. Seven more sold to wholesalers, cash-buying jobbers, local purchasers and retailers. Others sold to two or three of these.

It is in this shorter route from producer to consumer that urban distribution costs will ultimately be lowered, and greater social efficiency attained. Evidently the sanest way to hasten this lower cost is to grant to each of the various types of business men indicated above the facilities needed for placing their business on the most efficient and best possible economic foundation. Let us give consideration then to the facilities needed by each of those who handle food products from the farmer to the consumer to see what the city can do to lower their costs and make their business units more efficient and stable.

## FACILITIES FOR THE FARMERS

It costs slightly over one dollar in twenty of the entire wholesale value of farm products to haul goods from the farm to the shipping point. Consumers are paying many times over the eighty-five million dollars, and more, that our farmers are spending annually in marketing their output.

Among the more mobile, cheaper and more effective agencies that are at hand for distributing farm produce, and greatly reducing the costs incident thereto, may be mentioned the development of good inter-county roads. These are of distinct significance in reducing hours to market by heavier loads and ease of shipment. Good roads centering in good urban markets have instantly reflected their advantages in higher farm values. The good roads movement is of importance to every farmer. With no thought of deprecating the building of good state roads, yet it is clear that relatively few farms can ever be on state roads. As to food distribution the need is for good dirt roads with easy grades, connecting all local farms with their nearest market; not good automobile roads connecting cities with cities.

*Co-operation*

A second need is co-operation, with its accompanying advantages. In the nineteenth century the farmers' market was the nearby local merchant, who was constrained to give fair prices in order to retain the farmers' trade. The twentieth century, however, offers distant markets at cash prices. It consequently necessitates new marketing methods. Goods must be stored, sorted to the trade and packed for longer shipments. This nationalization of the market necessitates the nationalization of marketing methods. This is best attained for the farmer through co-operation because of better business management, better preservation and more direct shipments with consequent elimination of waste and decay.

Mr. Arthur J. Anderson of this committee, editor of *The Pennsylvania Farmer*, states the status and need for producers' co-operation as follows:

"Improvement in marketing conditions is recognized by farmers as the greatest need of their industry at the present time. The various conditions and agencies



outlined in the foregoing paragraphs as contributing to the high cost of food products to city consumers are as effective in depressing prices to the producers. In many respects the needs of consumers and producers in eliminating the needless waste in transportation, handling and distribution are identical, and remedial measures will fall short of the most permanent and broadest economic good if they fail to make production more profitable while cheapening the cost to consumers.

"Effort on the part of farmers in improving marketing conditions has necessarily been slow of results, due largely to the lack of efficient organization. Co-operation is the theoretical remedy sought, but as yet it can scarcely be said to have progressed much beyond the theoretical stage. Successful co-operation on a broad scale is possible only in well-knit organizations, well-trained in organization work and with the spirit of co-operation well developed. American farmers have always prided themselves upon their independence, and by tradition and habits of thought they have made the merging of interests so essential to co-operation most difficult at this time. Thus we find that while the application of co-operation to marketing has engaged the attention of the leaders among farmers for the past twenty years, the movement is still in its preliminary stages.

"Replies from state officials in charge of the departments of agriculture in 30 states show only 12 states in which co-operative organizations have been perfected for general buying and selling. Eleven other states report numerous small local organizations co-operating in the purchase of supplies and sale of products of special industries. Seven of the 30 states reporting show no effort made in organized co-operation. Reports of benefits resulting from co-operative effort indicate that the small local unit is the logical starting point for such work. Greatest success is reported from such organizations as The Grand Junction Fruit Growers' Association and the Rocky Ford Cantaloupe Growers' Association of Colorado; the Monmouth County Exchange of New Jersey; The Eastern Shore Produce Exchange and the Norfolk Truckers' Exchange

of Virginia, etc. These organizations confine membership to a local area and confine their efforts to the needs of special, localized crops. Benefits have resulted in improving market facilities, standardization of methods of production, grading, packing and handling, giving a better and more uniform product and yielding a larger net profit.

"These local organizations are making most promising growth and are becoming factors in solving marketing problems over a wide area. They include co-operative creameries, grain elevators, exchanges for handling wool, potatoes, alfalfa, hay, grain and fruits. They are meeting the needs of local communities, but perhaps of greater significance, they are training their members in organization work and preparing the way for successful co-operation in the general field.

"General co-operation, *i.e.*, the organization of general farmers for the purchase and sale of general farm merchandise, has been less successful and is less promising at this time. This work has been undertaken largely by such general farm organizations as the Grange, Farmers' Union and Farmers' Clubs. The difficulty appears to have been a lack of sympathy and confidence necessary for successful co-operation over a wide area and representing a diversity of interests. If these state and national orders will profit by the lessons of the past, they will confine future effort to co-operation in local units rather than in state-wide movements.

"Co-operation by consumers has made even less progress. Only four states report organizations for this purpose. Minnesota reports the interesting fact that 'consumers' co-operation has resulted in the development of over one hundred co-operative stores, practically all of which are owned and controlled by farmers in villages throughout the state.' In New York, consumers' co-operation has been undertaken under the direction of a state Bureau of Co-operation, with successful units at Schenectady, Albany and New York City, composed principally of working people of foreign birth and training. Results are reported as 'phenomenally successful

and a great amount of interest is being shown among laboring people generally.'

"So far the states have given very little attention to the organization of co-operative associations as a state function. The new departments of agricultural college extension, inaugurated in most of the states, are expected to take the matter up in a more or less direct way. This will be largely in an educational capacity, however, and not actual participation or leadership in the movement. South Carolina has established a State Bureau of Marketing which reports 'transactions running into thousands of dollars each week and used by farmers and merchants as a clearing house, absolutely eliminating the middleman.' This bureau was enlarged by a state act passed in the present session of the legislature providing for a marketing agent in each county of the state. New York, with its Bureau of Co-operation, is doing the most direct work. It has about 50 co-operative companies organized and incorporated, although in a great majority of these, all the producers have as yet attempted is the purchase of ordinary farm supplies, seeds, fertilizers, machinery, etc.

"Farmers' co-operative organizations have as yet scarcely touched the selling end. They are doing much in the buying of farm supplies, but general merchandising business, establishment of stores, employment of selling managers, etc., must wait until the members learn how to co-operate, that co-operation pays and that mutual aid is self-aid. The success of the small local units is pointing the way, and there is encouragement in the results they are attaining.

"The success of the farmers in securing better marketing facilities and a higher net profit in farming is of as vital importance to the cities as to the farmers themselves. The general demand of the present is for increased production, and this demand must increase with each succeeding year as population increases. Yet there can be little hope for increased production of farm products until the markets yield a commensurate return for increased labor and investment in increasing crop yields. The effect of 'bumper crop' production today is first to

decrease prices to producers. The agencies operating between the producers and consumers absorb so wide a margin of profit as to make the natural law of supply and demand inoperative. In the present season of large crops, thousands of bushels of fruit rotted on the ground for lack of a market price. Apples sold for from 15 to 30 cents per bushel within 50 miles of Philadelphia. Potatoes are selling for 20 to 30 cents per bushel and many other crops proportionately. The farmer is asking himself what encouragement there is for him to increase his crop yields when he is the first to suffer from large crops. The city consumer must interest himself in the profits of farming as the only factor which will materially increase the supply of farm produce."

### *Municipal Markets*

The city can very definitely further the farmer's marketing facilities by the establishment of municipal markets. The attitude of producers toward public markets is revealed by the fact that the vegetable growers of the country, in answers sent in to the chairman of this committee, voted 12 to 1 in favor of a more general development of municipal markets. The objection of those who voted negatively seemed to be based largely on the fact that city authorities would not co-operate with growers, while one producer felt that the market was "a good place for the city people but not for the gardener." The usual difficulty with the city's policy as to its municipal markets is that it has no policy. Municipal markets do not develop themselves. The custom of the average American city to simply set aside a plot of land or a building and establish by decree an open or a closed market thereon or therein does not make markets. A definite, virile, constructive policy is essential to market success. In the first place, the farmers round about must be assured of the permanency of a market policy in order that they may adapt what produce they grow to sales in a municipal market. Farmers who grow cereals primarily will not be interested in markets, and farmers who have never had the municipal market brought before them as a means for disposing of their goods at better prices will continue to "cling to the easier lack-of-thought-way of dumping a wagon-

load into a car, taking what's offered, and going home and grouching about it throughout the winter months."<sup>1</sup>

Successful farmers' markets mean that farmers must change their marketing methods, and changing marketing methods is a Herculean task for any city to attempt. More than this, there must be adequate publicity in the city so that consumers will be constrained to change their buying methods and buying places. The widespread publicity of the free public markets recently established in New York City is responsible for the countless hundreds of consumers that frequent those markets and for the fact that ladies in automobiles come down to buy shoulder to shoulder with the wash-woman of the slums.

The city's policy, moreover, must be such as to clearly distinguish between the bona fide farmers and those who are not bona fide farmers. An abuse long rampant in many of our cities has been that municipal markets are, at their best, places for the congregation of professional retailers and for the disposal of mediocre goods by wholesale houses. The farmer and the consumer alike become disgusted and neither frequents the market after a time. This is not to say that sections for professional retailers cannot or should not be set aside. It is by way of saying very definitely, however, that these sections should be clearly marked. Moreover, retail municipal markets must be adapted to population movements and must be moved as population shifts. Not only must they be adapted to population movements but to modern conditions and usages as well. The retail unit characteristic of the day of the telephone and central supply station is the small store, usually the chain store, where there is a quick turn-over of capital and where delivery charges are low. Much has been said about the high cost of delivery. The chairman of this committee recently met on the street a boy with a push cart, delivering for one of the leading chain stores of Philadelphia. The boy, upon inquiry, indicated that he received about \$.85 or \$1.00 a day. He was then asked how many packages he delivered. He responded that he had delivered within the last three hours ninety-eight packages. This was on an average of less than one-half cent per package.

Through push cart and motor deliveries, through shipments by co-operative deliveries, the municipal market need not be under

<sup>1</sup> H. B. Fullerton, Director Agricultural Development, Long Island Railroad Company, Medford, Long Island, N. Y.

a heavier expense than the well-regulated private store. Moreover, retail markets can be given a definite standard in the community through adequate and proper public inspection. Instead of being a place where weights and measures are misrepresented, and where qualities are subject to suspicion, the municipal market, under a proper market policy, can be commended to all for the honesty of its measures, and for quality as represented. And finally due regard must be had to the buying habits of city dwellers. Purchasers cannot be expected to go in one direction for general purchases and an opposite direction to market.

The most inexpensive farmers' market is the open-air or curbstone market. These are numerous in foreign countries and in certain American cities as well. Charges range from twenty-five to fifty cents per day for vehicles. There is special need for indicating definitely the sections of these markets used by bona fide farmers and by professional retailers and venders. The permanent market, however, must be ever the well-housed market.

Under twentieth century conditions the municipal market is not the only means for bringing the producer and the consumer into immediate contact. With the development of the parcels post and cheap express, the habit of buying by telephone and the unwillingness of the housewife to go to market with a basket on her arm can be overcome with the direct shipments from farmer to consumer.

Mr. H. B. Fullerton, of this committee, Director of Agricultural Development of the Long Island Railroad Company at Medford, Long Island, has practically nationalized the use of the hamper as a means of direct shipment. Mr. Fullerton points out that:

"The shipments by hampers, express and parcels post can take care even of the big hotels and restaurants, which must have not only quantity and quality, but perforce continuity. . . . That this can be done is proved by the tonnage that is now being handled. . . . That it will take months, and possibly years, goes without saying, but there are little local communities on Long Island, for example, that could supply hotels with regular guaranteed requisites, in the line of rhubarb, asparagus, peas, beans, melons, berries, cabbage, potatoes, cauliflower, apples, eggs and butter. I know of a number, where the varieties of productions are great enough to include, not

only all of the above named, as well as the smaller varieties, such as radishes, eggplant, etc., but add to it all the substantial and luxuries of the sea, from flatfish, through scallops, to oysters. To properly handle this business will necessitate community associations, exemplified, for instance, by the granges, who must have at least one regularly ordained business-manager, to take care of their city business and to see to the correct and continuous shipping, as well as the grading and packing. Just this thing is done and successfully. It is simply a matter of substituting an extremely satisfactory method for a hit-or-miss, extremely unsatisfactory method, crudely, clumsily developed in the conveyance of food products from producer to consumer. In the near future, Long Island potatoes, asparagus, oysters, cauliflower, apples, can be promptly obtained by phone, by letter or by personal solicitation at regularly established offices or depots in our great cities. Eastern shore sweet potatoes, Cape Cod cranberries, or late grapes will be obtained in exactly the same way at a far lower charge to the producer than under the present plan."

The proper development of the municipal market and the adequate encouragement of direct shipments mean perforce that the city must have a market bureau, virile and awake to marketing possibilities. The work of the city market bureaus can be supplemented by the work of state bureaus and of the national bureau. The distribution problems peculiar to each city, each state and the nation can then be studied by specialists and a more efficient and less costly system of distribution can slowly be worked out that will mean lower costs to the farmer, the manufacturer, the producer everywhere, and lower living costs to all. Through these market bureaus the producer and the consumer, whether individually or through co-operative associations, can be brought ever more closely together. Through such market bureaus, needless costs may be eliminated and the information secured essential to sane, constructive action toward lowering living costs.

These market bureaus can be of use in preparing, as do European market bureaus, adequate bulletins as to prices within the city. In Germany, a definite function of the market department of the larger



cities is the daily publication of wholesale and retail prices. A number of the vegetable growers, in sending in answers to the questionnaire sent out by the chairman of this committee, made suggestions quite in line with this usage abroad by stating their opinion that the only adequate and reliable means for keeping all growers in touch with market quotations would be a government bureau, city or state, whose function would be to assemble and disseminate information of this character.

### FACILITIES FOR WHOLESALERS AND JOBBERS

But the great majority of foodstuffs must be and are most economically handled in carlots. This necessitates the wholesale receiver and jobber. As a means by which costs to wholesale receivers and jobbers can be diminished and their facilities increased, four activities are suggested: (1) Adequate steam and water terminal facilities and trans-shipping facilities; (2) terminal wholesale markets; (3) better price reporting agencies together with better equipments by the national and by state market bureaus for disseminating information as to prices and crop conditions in this and other countries; (4) cold storage and carting facilities.

In its preliminary report to the mayor and aldermen of Chicago, the Chicago Municipal Markets Commission states:

"Chicago's orderly growth is retarded by lack of adequate, modern railroad terminals and connections between them. This is especially so in relation to the city's food supply and any permanent relief which may be obtained from the increased cost of living will come only after the freight terminals of the city have been reorganized. Chicago, by nature, should be the cheapest and most accessible market, but on account of the antiquated and wasteful method obtaining at its railroad terminals, its efficiency as such a market is greatly impaired.

"The cost of living in Chicago is in a very great degree dependent on the cost of transportation of the necessities of life. Mr. Hale Holden, vice-president of the Chicago, Burlington & Quincy Railroad Company, has stated that his road brings a ton of coal from southern Illinois, a distance from Chicago of 400 miles, for \$1.05, but that the average cost of delivery in the business district of Chicago

by wagon from team track to consumer is over 50 cents a ton, or about half of what the railroad charges for bringing the same ton 400 miles.

"A wholesale merchant in Chicago at present receiving a shipment of five carlots of produce from various roads, finds that one car is on the tracks of the Chicago & Northwestern Railroad; one on the Chicago, Milwaukee & St. Paul tracks; one on those of the Wabash; one on the Illinois Central, and one on the Chicago, Burlington & Quincy. The prospective carlot purchaser must be taken about to five separate railroad yards for the inspection of the goods. Likewise, if the goods thus arriving require delivery at the warehouse, team haul is required to and from the different railroad yards.

"Mr. August Geweke, president of the Cook County Farmers' & Truck Gardeners' Association, has stated that it 'takes four days to move a car loaded with perishable goods 10 or 15 miles into the Chicago market. The regular time is from four to six days, and three days is the quickest we can get it in; eleven and twelve days will often happen. Now this thing is a great damage to the producer. He will lose over 5 per cent every day his product stands in the car. I am only 15 miles from Chicago and sometimes I cannot get a car in here until two or three weeks, and it will always take from three to ten days. I have known it taking from four to six days to get a car in here from three miles from the city. This applies to the south and all over.'

"Anything which will lessen the cost of transportation of food products must of necessity lessen the cost of the commodities to the consumer. The operation of transferring food products from one mode of transportation to another is not only more or less expensive in time and labor, but is, as a rule, detrimental to the value of the commodity, deterioration of the latter setting in rapidly. In the case of perishable foods trans-shipment should be avoided, and, if possible, a single line of transportation should be used to convey food products direct from shipper to the retailer or consumer. However, where several methods of transportation of food products are to be used,

it is but the part of economy to devise means whereby the more economical method of transportation should be preferred over the more expensive.

"Of the three methods of transportation, it is estimated that the relative cost under present conditions is six-tenths of a mill per ton mile for water, four mills per ton mile for railway and 50 cents per ton mile for wagon transportation.

"It is clear that water transportation should be used wherever possible and wagon transportation as little as possible. Either waterways or railways should be used to convey the merchandise as near to the locality of the consumer as possible.

"Delivery of farm products from the railroad freight stations in Chicago is carried on by teaming and in nearly every instance requires a long, tiresome team haul through the loop district. The expense of such team haul between the terminal and the store of the wholesaler or retailer is added to the cost of the commodity and its selling price increased in proportion. It has been stated that the price of meat in the suburban villages about Chicago is cheaper than in some parts of Chicago because of the fact that meat is put on cars at the packing house and taken off at the suburban station on a man's back and carried into a butcher shop; whereas, in Chicago it is often hauled many miles by wagon.

"The relatively small area in the city of Chicago in which team hauling of food products to and fro is carried on lies between Twelfth Street on the south, Chicago Avenue on the north, and the river on the west. It is less than two miles long and less than one mile wide. It is estimated that in this area teams now haul daily 150,000 tons of freight.

"The team traffic of New York City is estimated at approximately 70,000 tons per day; that of Boston, 55,000 tons per day, and that of Philadelphia, 68,000 tons per day. Chicago's daily team haul of freight at present is greater than that of any other large city.

"The hauling of food products to and fro through the city's business district is an anachronism and a disparage-

ment of the civic spirit and municipal statesmanship of the city of Chicago. The loop district in the present era of the city's growth is entirely unsuited to wholesale business, both of food products and other commodities, and its territory has become altogether too valuable for such use, being more fitted for retail business."<sup>1</sup>

Chicago has set about to make a thoroughgoing and careful study of her terminal and wholesale facilities from the point of view of community adequacy and growth, as witnessed by such publications as: Report by J. F. Wallace to Committee on Railroad Terminals of City Council of Chicago; address by George E. Hooker appearing in "Railway Terminal Problem in Chicago"; "The Railroad Terminal Problem of Chicago."

Chicago has frankly stated the inadequacy of her terminal facilities. The situation in other cities is not far different from this. The thorough co-ordination of all the agencies for urban distribution by belt lines and other means and the efficient re-arrangement of inner and outer freight stations and adequate wharfage and dockage facilities are the needs of practically every American city. Congestion in street traffic, delay en route, expensive re-shipping—are all incident to the present-day terminal situation in American cities, born, as it is, of a haphazard growth of different railway and water lines, never as yet correlated by a thoroughgoing community action.

The re-distribution of terminals, and the extended use of freight distribution by electric lines will minimize the social waste now characteristic of so many American cities.

The prime essential to adequate facilities for handling, sorting and selling food products in any city of any size is an adequate terminal wholesale market. Hon. Cyrus C. Miller, formerly President of the Borough of the Bronx, and Chairman of the Mayor's Market Commission of New York City, who has done more than any other man in this country to show the advantages that would accrue here, and that have accrued abroad, from the proper development of terminal market facilities, says as to wholesale terminal markets:

"Wholesale terminal markets should be built on the water-front if possible, into which all railroads could run their cars without breaking bulk. Such markets should

<sup>1</sup> Preliminary Report to the Mayor and Aldermen of the City of Chicago by the Chicago Municipal Markets Commission, April 27, 1914. Pp. 19-20.

have cold storage rooms into which the contents of refrigerated or cooled cars could be transferred without delay. Broad streets should be made so that trucks would not be delayed in taking away the goods. Auctioneers, licensed by the city, should be given the right to sell all goods which the shipper desired sold at auction, so that goods could be consigned directly to the market and sold without intermediate handling. Daily market reports should be issued, stating the kinds and quantity and prices of goods in the market, so that the retailer and the housewife could be informed of the state of the market.

"The wholesale market may be termed the primary market. Various forms of retailing or secondary marketing are advocated, such as co-operative stores, chain stores and the like, but it is evident that many of the high prices now charged by the retailer are due to the fact that he cannot buy his goods at reasonable prices. He must charge high prices in order to live. Lack of wholesale marketing facilities and lack of knowledge on the part of the housewife combine to make high prices possible. Gluts in the wholesale markets seldom are known throughout the city, so they result only in waste. High prices in the city mean low prices eventually in the country. The result is under-consumption of food products and consequent hardship to the people in the cities and loss to the farmer because of lack of demand for all he raises. Even if he succeeds in selling part of his crop at good prices, the balance left on his hands often makes the whole crop unprofitable. A steady demand at even low prices makes for better business than alternate high and low prices, as it enables the farmer to calculate upon a uniform business."<sup>1</sup>

In further discussion of this subject, the Mayor's Market Commission, of which Mr. Miller was Chairman, says in its report, published in December, 1913:

"The idea of wholesale terminal markets is not new outside of New York; it is not new in New York, but it has yet to be recognized and applied here in a large way.

<sup>1</sup> "Municipal Markets in Their Relation to the Cost of Living" by Cyrus C. Miller, *The Annals of the American Academy of Political and Social Science*, July, 1913. Pp. 146-47.

In Berlin they have had a wholesale terminal market for over twenty years, the only fault being that it is not now large enough to accommodate the trade that seeks it; they have one in Munich, in Frankfort, London, and other cities abroad. It is the recognized type of municipal market in the larger cities of Germany, where they have given the subject close study. Its effectiveness lies in the fact that such a market cuts out unnecessary steps—it does not introduce radical changes in business methods, but rather gives business men the means for more efficient service. It is axiomatic that business is conservative and slow to change its methods and habits. We recognize the futility of proposing radical changes theoretically alluring or untried methods that will meet with distrust.

“The lack of system in the wholesale marketing here today is a handicap to efficient service and a cause of great expense. This expense is of three kinds: One, the actual cost added to the goods for the trucking and rehandling necessary; two, the loss of goods deteriorated through exposure to harmful temperatures after unloading from the cars or through bruising in being handled many times; and, three, the loss of goods kept from market because of the lack of facilities. These three factors would be eliminated in proper terminal markets. It is likely also that in time the expense and loss in regrading goods would be reduced as the market management makes known throughout the producing sections the methods of grading and marketing most advantageous in the market. . . .

“These wholesale terminal markets should be what their name implies—markets on the terminals of as many transit lines as possible, so that they will be supplied with a full range of commodities. They should be union freight terminals with modern marketing facilities. No one railroad brings a great enough variety of products to supply a market with all lines. They should have sufficient space for handling cars from different lines with dispatch. Refrigeration should be provided for both temporary and long storage, and there should be refrigerated rooms into which refrigerated cars could discharge their contents without change of temperature and consequent injury to the

goods. The handling of produce should be by machinery as far as possible. Separate parts of the markets should be devoted to the sale of different products, but the market should be so arranged that a dealer could buy his various supplies without going too far. Connected with each market should be a post office, bank, telegraph office, public telephone, restaurant, infirmary, and a comfort station. Of course, many details must be left for future elaboration, but it is probable that economy will be effected by having a delivery service by automobile trucks belonging to the market. Each market should also have a retail department and a canning and preserving plant.

"A prominent feature of nearly all foreign municipal wholesale markets is the provision for sales at auction of all goods consigned directly to the market, conducted by bonded auctioneers licensed by the city. Such sales are not provided for in any of our public markets at present—there are no markets to which shippers can now consign directly; they must send goods to individual dealers. The auction method is now used here in disposing of California fruits and some few other products, and has recently been introduced into the live poultry trade."<sup>1</sup>

In order to fulfill its mission as a reliable terminal for produce sent into the city, a requisite essential to success is sale at auction by bonded city officials, forbidden to be interested directly or indirectly in the trade of market wares of any kind. The commission to be charged by these licensed auctioneers must be definitely fixed. In Europe the commission ranges around 2 per cent of the total annual auction sales. This in itself is a much lower cost for selling than the private commission charged in this country. This saving, however, is a very insignificant part of the total savings to be made by adopting the auction system. Great savings will be brought about through the elimination of all commission abuses. Of still greater significance, the producer will be tempted to ship to the city with such a department, knowing full well that he will get maximum returns for his goods. The producer then has three choices: Either alone or in co-operation with others, he can rent stands in one of the retail markets; he can ship directly to some wholesaler;

<sup>1</sup> Report of The Mayor's Market Commission of New York City. 1913. Pp. 23-25.



or he can sell at this public auction. The experience of European cities is that he prefers the third.

Just such results from auction departments in terminal wholesale markets are emphasized in a special consular report on European Markets.<sup>1</sup> Consul John C. Covert says as to this system in Lyons:

"Fish and game are brought here for sale from England, Germany, the Netherlands, Russia and from all parts of France. If a grocer or butcher anywhere in France, in fact anywhere in Europe outside of Lyons, has an overstock of any kind of provisions, he is always sure that he can get rid of it at the central market auction in Lyons. Often a stock of provisions is sold here at private sale by correspondence for and to parties outside the city."

Consular Assistant Frank Bohr writes as to results obtained in Berlin:

"The municipal sales commissioners are bonded officials who are forbidden to be interested, directly or indirectly, in the trade in market wares of any kind. They are responsible to the market-hall management, and are allowed to collect a certain fixed percentage of all sales made. The primary purpose of these officers is to offer distant dealers and producers opportunity to ship in their wares, and have them brought into the hands of Berlin dealers and consumers, through the agency of responsible middlemen and with the assurance of a published and steady price. A second or indirect purpose is that through their competition with the private wholesale dealers and through the daily publication of their report on the average wholesale prices for all wares and at all the halls, the municipal sales commissioners exercise a steady influence upon the entire wholesale business. Although it is estimated that they handle only about one-fifth of the total wares received at the central market hall, it is nevertheless conceded that they indirectly prevent extortion by the private wholesale dealer upon the producer or dealer on the one hand and upon the consumer or retailer on the other."

<sup>1</sup> See Special Consular Reports, Vol. XLII.

There can be little doubt that the auction department of the municipal wholesale terminal market is of great value in getting reliable and stable sales for goods sent in alike from the neighboring regions and from the most distant countries. To prevent abuse, it would be necessary to enforce strictly the regulation that all goods sold at the auction department must come from without the city.

A wholesale market would attract not only retail dealers, large and small, but also the larger consumers, such as hotel and restaurant managers, and, more pertinent still, would make possible an increased amount of co-operative buying through consumers' leagues and consumers' co-operative associations. This direct buying without the retailer as an intermediary is definitely furthered by fixing the quantities that can be offered at wholesale at relatively small amounts. In the wholesale market at Havre, France, merchandise may be offered for sale in such small quantities as 6 ordinary sized bunches of vegetables; 9 quarts, or, when sold by weight, 11 pounds, of fruits and vegetables—even this minimum being reduced by half during April and May; vegetables which it is customary to sell by count, such as cabbages, cucumbers, tomatoes, etc., 1 dozen; oranges and lemons, 1 dozen; large vegetables, such as cantaloupes, melons, etc., in as small quantities as one of each. In Lyons, quails, partridges, ducks, etc., are put up in bunches of half a dozen or a dozen; eggs in lots of 100; oysters in boxes of 100; butter in lots of 50 pounds. With sales in such small quantities as these, the smaller consumers, through co-operation, and the larger consumers everywhere can buy with but one intermediary between them and the farmer, and that a public auction department that adds but 2 per cent to the cost of the goods.

The leading agency in this country for the reporting of crop conditions is the Bureau of Statistics of the United States Department of Agriculture, the most highly organized crop-reporting department in the world. This bureau secures at least four classes of reports as to acreage, condition and output of the crop in each section of the country: reports by state agents and by special traveling agents sent directly to the Secretary of Agriculture, and deposited in a safe until the crop-reporting board meets on a stated crop-reporting day; reports from 30,000 county and township correspondents sent to the Statistical Bureau, where they are assembled and averaged. On crop-reporting day, the statistician, with four assistant statisticians and agents, receives the four classes

of reports, in a meeting behind closed doors. From these four classes of reports the board arrives at state and national averages and totals, as to crop conditions, including the leading facts as to acreage and condition of each crop in each and every locality. At a stated hour this report is sent world-wide by telegraph and telephone. As it is cried out or placed on the blackboard in the trading pits of each of the primary markets, such as New York, Chicago and New Orleans, it is instantly transmuted into prices.

This Bureau, however, is not in any sense a price-reporting agency. The vegetable growers, in sending in answers to the chairman of this committee, made many suggestions as to means for keeping in touch with market quotations. A considerable number referred to the inaccuracy of quotations, and the fact that the quotations were not up-to-date, and urged that something be done to keep them accurate and up-to-date. A suggestion was made a number of times that producers should co-operate in large associations and each of these co-operative associations should keep a clerk in the market cities to report directly by telegram or telephone as to current quotations. A number of others suggested the need of a clearing house among the growers themselves for this purpose. Hon. Cyrus C. Miller of this committee states the need, and type of machinery needed, for a national market news agency as follows:

“One of the most discouraging features of market trade is the alternation of gluts and times of scarcity in the city markets. This is explained by the fact that the producers, through lack of proper information, often send in nearly all their supplies of some particular produce at once and little is held back for future demands. The wholesaler also having little means of knowledge of large purchases by other wholesalers may find his supply left on his hands by reason of an over-stocked market. The result is a deterioration of the quality of all the supplies of that kind in the market and the refusal of the consumer to buy. The producer, on the other hand, having sent his goods to market in good condition cannot understand why they do not bring a fair price. The consumer having no way of knowing that the immediate future will have a plentiful supply of certain produce in the markets, at a low price, does not prepare to buy them and they are wasted and

gone before he knows that they are here. The result is chaos and inefficiency from one end of the year to the other. The producer is discouraged because he does not receive a fair price, and the consumer buys a limited quantity, because the city dealers must charge him a high price for the diminished quantity of produce they sell. Distant sources and diversity of food supply have increased faster than the means of distribution of such supplies after they have reached the cities. This has resulted in a clogging of the channels and consequent waste and increased cost. The means of producing foods have increased faster than the demand for them, and the only way to increase the demand is to distribute the supply equally throughout the season so that the consumer may know that he can get, at all times, a good supply at a reasonable price. This will be better for the consumer and better for the producer. For the producer to be able to count on a steady demand at a low price would put his business on a firmer basis than the hazardous methods now in use.

"No agency would be so valuable both to producer and consumer as a reliable organization for the dissemination of market news.

"Such reports would make impossible the conditions cited recently by Dr. Royal Meeker, United States commissioner on labor statistics in speaking on wastage of farm produce: 'There is an almost perfect lack of co-ordination in distributing commodities. The resulting waste is stupendous. Cantaloupes were shipped last August into Washington in such quantities that commission merchants refused to handle them. On one day fifty-eight carloads of peaches were dumped into St. Louis which ordinarily can absorb about fourteen or fifteen carloads a day during the peach season. One hundred and sixteen carloads of apples struck New York City one day last month. The market was so glutted that apples from North Easton, Pennsylvania, netted only about 17 cents per bushel. At the time the consumer was paying \$1.60 to \$2.00 per bushel for bad apples, while the producer was receiving from 14 to 17 cents per bushel for good apples.'

"Two main classes of persons handling foodstuffs are interested in current prices—the first may be called the producers, which includes the farmer, the market agent, the shipper and all who are interested in selling to the cities; and the second, the consumers, which may include the wholesalers, the jobber, the retailer and the housewife and all who are interested in buying in the cities.

"It is necessary for the producer to know what the prices are in the cities and what the future supply and demand are likely to be; the consumer must know the probable supply and the daily price. Evidently the same statement of facts will be of interest to both. Therefore an organization to secure and give general information on prices current must have facilities for the collection and dissemination of facts.

"Within the city a properly organized market department can gather data upon the daily supply and the prices in the market, but when information is desired for domestic buyers and outside shippers upon the probable supply for a week or two in advance, another agency must come into play.

"The work of the city department will be facilitated greatly by the adoption of standards of grades and packages, so that the reports will be intelligible to everyone; for it is plain that market reports from Boston or New York will be of little value to persons outside of these places, if they have different standards of grades and packages.

"Market reports for the producer must contain not only the prices current in the cities, but also the approximate supply throughout the country and the volume and destination of its shipment. This is essential to enable the producer to avoid sending his goods to market in time of gluts.

"Good market reports in the cities will tend to relieve gluts by informing the housewife that certain goods are plentiful and cheap and thus stimulating consumption.

"Large shippers now avoid gluts fairly well by maintaining a staff of correspondents in different cities who warn them by telegraphic news in time to divert their

cars en route and to send them to cities where the supply is less and prices better. The large shippers also can protect themselves by using cold storage but there is no help for the small and occasional shipper who puts his goods on the cars and spends his time thereafter in wondering what they will bring.

"The Bureau of Statistics of the United States Department of Agriculture, described on page 35 of this article by Professor King, shows what can be done in collecting and disseminating crop news. It has a staff of correspondents practically covering the entire country. The method it pursues in collecting data on crops could be followed by any organization doing the same work, as the necessary facts could be collected during the growing period of the crops. Accuracy and not haste would be necessary. The facts of daily market conditions could be collected from the cities which are car lot distributing points, while the probable future supply for a week in advance could be obtained best by reports from shipping points and points of diversion.

"Mr. G. Harold Powell, General manager of the California Fruit Growers Exchange, gives the following account of the methods in use by that association:

"First, as to crop reports. We have about 6,500 members and they organized into 120 associations. In addition to these about 20 special contract shippers, either organized as associations or individuals, ship through the Exchange. Our crop estimates are based upon the estimates of each association or contract shipper and its estimate is based upon the report of the individual members of the association. In this way we secure preliminary estimates of the season's shipments about September 1st. We take another estimate about November 1st and then as the season progresses, a re-estimate of the crop each month. The estimates of the Exchange have been remarkably accurate. In January, for example, of the present season, we estimated that the Exchange would ship a little over 28,000 cars for the year ending August 31st. Our actual shipments for the year will not vary 250 cars from this estimate.

“‘Regarding marketing conditions: We have approximately 65 agents and brokers located in the principal markets of the United States and Canada. We receive daily telegraph reports from each of these markets regarding the conditions of every car in the market, the price at which the different sizes and grades are sold, and general market information. In addition to this we receive from all of the agents a weekly market letter giving the general conditions obtaining in each particular market, and at the end of each month a comparative sales report showing our sales for the month, as compared with former years.

“‘The telegraphic information received from all of these markets is put in bulletin form and sent out to our shippers each day, so that they have complete information regarding the conditions obtaining in all of the markets in the United States and Canada.’

“‘The success of this method of marketing the produce of the members of the Exchange is marked.

“‘The operating cost of the shipper who utilizes the facilities furnished by the Exchange, including the salaries and general expense of the 70 agencies, the maintenance and expense of the general office in Los Angeles, including the general manager’s and assistant general manager’s offices, the sales, traffic and legal departments, the cost of the daily market-news service, which is the most comprehensive market-news service that has been developed in any country, and all other operating departments, the Exchange share of the expense of the Citrus Protective League and all other expenses is, approximately,  $4\frac{1}{4}$  cents per packed box. This selling cost represents  $1\frac{6}{10}$  per cent on the gross sales.

“‘In addition to the operating cost, the Exchange has expended  $1\frac{1}{2}$  cents per box or  $\frac{6}{10}$  of 1 per cent of the gross value of the fruit for advertising its leading brands. This advertising expense is partly an operating cost and partly an investment for the sale of future crops. This makes a total cost of  $5\frac{3}{4}$  cents per box, or 2.2 per cent on the gross sales.

“‘While not a California Fruit Growers Exchange expense, there should be added to the marketing cost  $\frac{85}{100}$

of one cent per box, which is the average cost which the grower paid to maintain the sub-Exchange during 1913-14.

"This marketing cost, including the cost of advertising, which has been made possible by the co-operative efforts of the 6,500 growers who conduct their operations at cost without personal profit to any one, is the lowest cost of marketing an agricultural crop anywhere in the world. Illustrative of the low cost of the Exchange service to its members, it is interesting to note that the salary expense of the Los Angeles office, including the general manager and assistant general manager, traffic officers, attorney, cashier, sales agents and all assistants, including an average of 50 employes, is  $\frac{1}{16}$  of 1 cent per box. This unparalleled low cost to the members is, of course, due to the volume of the business, together with careful management.

"It is quite apparent that an organization to give adequate market information for the whole United States must be a big one and highly organized. It should have a Federal Charter.

"When we see commercial agencies like Dun and Bradstreet and co-operative organizations like the California Fruit Growers Exchange giving information to its patrons, there seems to be no reason why a national market-news agency should not succeed."

### FACILITIES FOR RETAILERS

The extension of direct buying by retailers and the securing of lower wholesale costs for retailers are wrapped up with the whole question of food distribution routes and terminal facilities and more particularly with the need for a marketing agency such as that already described, which will enable the retailer to locate goods and be assured of their standards without either the jobber or the wholesaler as an intermediary. No other factor will lower the retailer's costs so definitely nor facilitate his work so thoroughly as will standardization of packages and food products as discussed above.

At the suggestion of Mr. Morris Llewellyn Cooke, Director of the Department of Public Works of the City of Philadelphia, the Wharton School of the University of Pennsylvania and the Depart-



ment of Public Works co-operated in the spring of 1914 in a Retail Merchants' Week. This plan presents significant possibilities for extending the facilities of retailers and for lowering their costs. This Merchants' Week included special addresses on different phases of transportation, on advertising, credit, selling and buying problems; and was participated in by the retailers themselves. Such work carried on extensively cannot but redound to the city's good through better buying, better selling, better food preservation and better economies by retailers.

Closely related to the facilities for the retailers must be the steps taken by city officials to guarantee the wholesomeness of city foods and their freedom from contamination by disease, whether from flies, water or other source. Health officials, however, are ever in need of being warned that protection to the purity and wholesomeness of food, valuable as that is, is to be attained through the cheapest possible, practicable means of securing results for all. Added costs here mean added costs to the consumer.

### CONSUMER'S INTEREST PARAMOUNT

The city that sets its face toward securing lower food costs for its citizens will have to ever bear in mind definitely that the paramount interest is the interest of the average consumer. These interests are to be safeguarded through permanency in municipal policy. Thus the vacillating policy that today diminishes the sales in retail stores and tomorrow leaves those sales untouched cannot but be harmful in its final results. But this should not act as a deterrent in taking any action whatsoever. That a policy must be consistent and persistent is not saying that nothing shall be done. The city having once determined to develop an adequate system of public markets, for instance, should not be deterred from that development because a retailer here and there may feel that these markets are encroaching upon his sales. Neither can a city be deterred from the establishment of wholesale terminal markets or the adoption of the auctioneer system, which is especially recommended by this committee, on the grounds that there may be here and there a jobber, wholesaler or retailer whose sales may be diminished. The social attitude toward these men must be identical with the social attitude toward those laborers whose entire work and earning possibilities have been largely taken away because of the

introduction of machinery or new processes in manufacturing. There are at work now economic forces that are destined to lower distribution costs, increase production and make for more careful and direct buying and selling by middlemen and better and more judicious buying by consumers. These tendencies can be definitely stimulated by city action of the kind herein indicated and the farmer, or jobber, or wholesaler, or receiver, who rises up to say that no advanced movements shall be made, must be put in exactly the same category as the laborer who demanded that machines be kept out of factories because they would throw men out of employment. Society must move toward greater efficiency and greater efficiency means that the agencies by which the few make a living shall in case of need give way to the better good of the whole.

In conclusion, the cities may lower the food costs of their own citizens and make the way for lower food costs in other cities as well by: (1) Planning for a thorough co-ordination of its own distributing system; (2) by a city well planned for utility, and (3) by the establishment of market bureaus through which specialized studies can be made of the city's food problem and such steps taken on facts well collected and thoroughly digested as will lower food costs within that city.

One of the points to be attained in co-ordinating the transportation system is to make sure that there is a proper co-ordination of water and steam routes. Millions have been spent on our water channels; but channels do not mean that boats are plying upon them. Of as great importance as the channel itself are adequate water and terminal facilities. As a rule, in American cities, terminal facilities are inadequate, harbors ineffectively organized, wharves inadequately equipped and waterfront houses, cold storage facilities and trans-shipping machines inadequate. Co-ordination means, moreover, in the larger cities, belt lines through which water fronts and all of the railroads can be connected with the principal industries and the retailer can find it possible to have placed within ready hauling distance from his store such carload lots as he may be able to order either singly or co-operatively.

A city planned for minimum distribution costs will efficiently relate main depots to rail and water lines; co-ordinate steam and rail lines by publicly owned and controlled water terminal facilities in a harbor efficiently organized; and by a public belt line railway, if needed, to unite transporting, manufacturing and distributing agen-

cies; pay heed to good through roads, local water routes and to trolley lines that local freight may be sent direct to the section of the city where it is wanted; and connect the main centers of distribution by a convenient and orderly location of streets.

Countless are the questions that a well-organized market bureau can answer and numerous are the functions that it can perform. The immediate need of every city of the country at the present time is a market division which will develop sustained market policies for the city, hunting out the weaker and more costly places in the city's distribution system, securing efficiency therein and rendering assistance to farmer, country buyer, wholesale receiver, jobber, retailer and consumer that food products may be secured at minimum costs with a maximum amount of directness, minimum deterioration and adequate quantities.

## APPENDIX

### VEGETABLE PACKAGES FOUND ON EASTERN MARKETS<sup>1</sup>

M. H. SCHONOUR, *Department of Vegetable Gardening, Cornell  
University*

Numerous and widely varying styles of containers are used on Eastern markets, for the different kinds of vegetables. It would be best to discuss these changes in full as to dimensions in the beginning, to avoid later repetition when the vegetables are considered separately.

#### BUSHEL HAMPER

This carrier is unquestionably the one most frequently seen on most Eastern markets. It is used in connection with a wide variety of vegetables. Its capacity is one full bushel. The inside dimensions are; Height, 20 inches; diameter at top, 15 inches; diameter at bottom, 9 inches. It is usually made of poplar and is strongly built, being re-enforced by circular hoops and sometimes further braced by wires or diagonal straps.

Among the advantages possessed might be mentioned the following: It holds a unit measure, it exhibits the fruit satisfactorily, it can be used for different vegetables, it is durable, it is firmly established on the markets. The greatest disadvantage is that it is somewhat hard to handle.

The following vegetables are often marketed in this carrier: Beans, beets, carrots, cucumbers, eggplant, lettuce, onions, peas, peppers, radishes, spinach, sweet corn, turnips.

<sup>1</sup> In the winter of 1913-14, Mr. J. C. Keplinger, then a student in the Department of Vegetable Gardening, at Cornell University, Ithaca, New York, undertook as his undergraduate problem the preparation of a list of the terms and abbreviations appearing in market quotations and to learn, as far as possible, their meaning. His work made evident the deplorable state of affairs existing with reference to both containers and terminology, and, in addition, it made clear the difficulties of learning the exact facts involved. It was found that the questions could not be worked out satisfactorily by correspondence alone, but that visits to growers and to markets would be necessary. Mr. M. H. Schonour became interested in the subject and undertook with the assistance of the National Municipal League, to carry the work further after Mr. Keplinger's graduation. He spent some time in the gathering of material on the markets of southeastern Pennsylvania and of New York. His findings are submitted herewith. It is believed that his report includes practically all of the packages that are in use on these markets at this season of his work, August and September. However, this is the season when southern shipments are at their lowest ebb. Further, a similar investigation of other markets would greatly increase the number of different packages treated. To make the study thorough and complete would require at least the full time of one man for two seasons with the assistance of others during part of the time. This information gathered from the sources mentioned and elaborated in consultation with all the parties interested is indispensable as a foundation for the solution of the standardisation problem.

## FRACTIONAL BUSHEL BASKETS

The type most frequently met with in this group is the so-called five-eighth bushel basket. It is the most popular carrier found on the Philadelphia market. As its name indicates, it holds 20 quarts. It is built of the same material and after the same fashion as the bushel hamper. It is also used for practically the same vegetables.

Baskets of this same general type are used down to as low a content as 2 quarts. These smaller baskets are used chiefly in connection with very early and fancy tomatoes. They are also more frequently met with in retail markets.

## BARREL

The barrel finds its greatest use in the marketing of the larger-sized vegetables. Cabbage, squash, etc., are commonly marketed in the barrel. But at the height of the market when prices are low smaller vegetables also appear in barrels. Radishes are then seen in this kind of container. Among the list of vegetables packed in barrels might be mentioned the following: Beans, beets, carrots, cauliflower, corn, cucumbers, lettuce, onions, peas, spinach, turnips, squash, potatoes, sweet potatoes.

A legal barrel must represent a quantity of 7,056 cubic inches or be of the following dimensions; Head diameter,  $17\frac{1}{2}$  inches; length of stave,  $28\frac{1}{2}$  inches; bilge, not less than 64 inches outside; distance between the heads, not less than 26 inches. A variation of one and one half per cent ( $1\frac{1}{2}$ ) above or below will be allowed, but the variation shall not be uniformly below in a test of twelve barrels taken at random.

When fractional size barrels are used such as " $\frac{1}{2}$  or  $\frac{3}{4}$  barrels," the size shall be plainly marked.

## BUSHEL BOX

There are several types of bushel boxes. These vary slightly both as to actual measurements as well as to method of construction. The difference in measurements is due to different manufacturers adopting a certain size in an effort to build up a trade standard. However the content must fall within the legal requirement.

The variation in method of construction is due to variation in the size of the vegetable to be carried. This variation is found chiefly in the spacing of the slats.

The legal content of a bushel is 2150.4 cubic inches, but a variation of 57.4 cubic inches above, 38.7 ( $1\frac{1}{2}$  per cent) cubic inches below is permissible, providing the variation shall not be uniformly below in a test of twelve containers taken at random.

## BERRY CRATE

The standard 32-quart berry crate is used in connection with quite a few vegetables. It is in no sense a standard container for any single vegetable but is used as a makeshift for several important vegetables such as carrots, tomatoes, etc. The appearance of this crate is probably familiar to every one as it is almost an exclusive carrier for all of the smaller fruits. The dimensions are 20 inches by 13 inches by  $11\frac{1}{2}$ . Other sizes are found but the above is about as common as any

## BEANS

Beans are most commonly seen in the bushel hamper. This is the common carrier regardless of whether the beans are home-grown or shipped in from some Southern or Western locality.

Upon the Philadelphia market the five-eighths bushel basket preponderates the use of the bushel hamper. This is the only exception on most of the Eastern wholesale markets.

Barrels are occasionally used. The one-half barrel type is met with oftener than the full barrel.

Beans are sometimes sold in a bushel box. The dimensions of one of these boxes which was seen most frequently was 20 inches long, 12 inches broad and 9 inches high. The beans it contained were grown in New York state.

Early and fancy beans usually appear in a one-third bushel box. The dimensions are  $21\frac{1}{2}$  inches long, 8 inches wide and 5 inches high. The capacity is .39 bushels. Beans packed in this container are usually Southern grown.

Beans are occasionally sold by weight. They are packed in strong burlap bags with the weight plainly marked on the outside. This weight is usually 100 pounds. It is only rarely that string beans are marketed in this fashion. Lima and wax beans, however, are frequently thus sold.

Lima beans are commonly and almost exclusively sold by the gallon and its smaller divisions. They are measured out of barrels, crates, bags or any convenient carrier.

Hamper baskets of 28-quart and  $1\frac{1}{4}$ -bushel capacity are sometimes used. The 28-quart basket has a depth of 18 inches and a diameter on top of 15 inches and a diameter on bottom of 8 inches. The  $1\frac{1}{4}$ -bushel basket has a depth of  $19\frac{1}{2}$  inches and a diameter on top of 17 inches and a diameter on bottom of 11 inches.

The 32-quart berry crate is sometimes seen on the New York City market.

## BEETS

When sold by the bunch (which is the common practice), beets are usually handled in the most convenient empty package. In this connection the bushel hamper, fractional bushel baskets, stave baskets and baskets of greater than a bushel capacity are all used more or less frequently. The dimensions of the bushel hamper and the five-eighth-bushel basket are described in the introduction, and the 28 and 48 baskets are detailed in connection with the discussion of beans. The one-half-bushel stave basket is  $7\frac{1}{2}$  inches deep and has a diameter of 14 inches.

The standard barrel and its fractions are frequently used for marketing beets. When carried in barrels the beets are usually sold by weight.

The standard 32-quart crate is occasionally used for carrying beets.

## BRUSSELS SPROUTS

Brussels sprouts are handled almost entirely by the barrel. Smaller lots are sold by the quart.

Bushel hampers and fractional bushel baskets, especially those of the stave type, are used occasionally.

## CABBAGE

Crates of varying sizes are quite commonly used for cabbage. A crate with the following dimensions is seen quite frequently: 36 inches long, 18 inches broad and 12 inches high. Its capacity varies with the size of the heads. The so-called pony crate is 32 inches by 11½ inches by 11½ inches, and holds 55 pounds. Among the larger crates, the one with the following dimensions is the most common: 34 inches by 17 inches by 17 inches. It holds about 145 pounds. An exceptionally large crate is sometimes used on the New York market. Its dimensions are 44 inches by 28 inches by 25 inches. This crate is very strongly built and is re-enforced by wires. It is a very difficult crate to handle.

The barrel, in spite of all its disadvantages, is probably used more frequently than any other container for the marketing of cabbage. The regular size barrel, as well as the smaller barrels, is used.

The bushel hamper is often used for marketing cabbage. Several large New Jersey growers prefer it to all other containers. Stave baskets and fractional bushel baskets are used more or less commonly, especially with the early crop.

## CANTALOUPE

The crate is used almost exclusively for melons. The standard size is 22½ inches by 12 inches by 12 inches. The number of melons varies greatly, being governed by their size. About 45 is good average content. A crate 24 inches by 12 inches by 12 inches is also frequently seen. Both of these crates have twelve slats, two and one-half inches wide and three-eighths of an inch thick.

The so-called pony crate is 22½ inches by 11 inches by 11 inches. When a certain number of melons is contained in this crate it is considered as a standard crate. This number on the New York market is 56 melons.

Numerous small-sized crates or flats are seen on the markets. The dimensions of these vary. A crate holding twelve melons wrapped in tissue paper was 20 inches by 13 inches by 4½ inches. A crate holding twelve melons not wrapped was 22½ inches by 13½ inches by 4½ inches. A crate holding fifteen melons not wrapped was 22 inches by 12 inches by 4 inches. From this one can judge the wide variation in the size of crates as well as in the number content. All of these above-mentioned crates contained melons grown in Colorado and California.

Eastern melons are also packed in this style of crate but not exclusively so. Hampers and fractional bushel baskets are used as well as barrels in some instances.

Bushel boxes, 22 inches and 18 inches by 11 inches by 11 inches, are used occasionally for local home-grown melons.

The climax basket is growing in favor as a carrier for early and fancy home-grown melons. It is a chip basket with a handle and holds one-third of a bushel. The top is 18½ inches by 7½ inches to 8½ inches, the bottom is 16½ inches by 6 inches and the depth is 6½ inches. A top usually comes with it.

The barrel is used considerably on the New York market for the local and New Jersey grown melons.

## CARROTS

Carrots, along with the other bunch vegetables, possess certain marketing features that distinguish them from other vegetables. They are usually sold by bunches, but they may also be sold by weight. The fact that they are thus sold explains the fact that they are handled in almost any kind of package the seller has convenient. In frequent cases they are kept in a loose pile and counted out in the nearest empty package.

The barrel is used probably more than any other container. Fractional size barrels are even more common than the standard barrel.

Bushel hampers and baskets of smaller capacity are frequently seen containing carrots.

Carrots are sometimes sold in sacks. The capacity is expressed in either weight or by so many dozen bunches.

Various sizes of crates are occasionally used in connection with the marketing of carrots. A large crate with the dimensions of 34 inches by 17 inches by 17 inches is about the commonest. It contains about  $4\frac{1}{2}$  bushels or 225 pounds of carrots. The standard 32-quart berry crate is seen fairly frequently.

## CAULIFLOWER

Cauliflower is most frequently marketed in crates. One of the most popular sizes is 36 inches by 18 inches by 12 inches. It is built with two panel ends and one center frame 18 inches by 12 inches, and 10 slats 36 inches by  $4\frac{1}{2}$  inches. Three of these slats are on the broad sides and two on the narrow sides. The amount contained varies with the size of the heads.

Cauliflower crates holding one dozen heads vary in dimensions. The most typical one measured 20 inches by  $16\frac{1}{2}$  inches by  $8\frac{1}{2}$  inches. Other sizes seen were: 20 inches by  $18\frac{1}{2}$  inches by 8 inches and 20 inches by 17 inches by 8 inches.

A crate of truncated pyramid shape is rather common on the New York market. It is 24 inches long and 8 inches high. It is 18 inches across at the top and 13 inches across at the bottom. Its capacity is determined by the size of the heads. This crate is popular among Long Island growers of fancy cauliflower.

The barrel is very frequently used for cauliflower among all Eastern growers. The bulk of the late crop is so marketed.

Bushel hampers and baskets of capacities down to 20 quarts are often used to market cauliflower. Stave baskets of a bushel and a half bushel capacity are popular on smaller city markets.

## CELERY

Celery is most frequently marketed in crates. These crates are of all kinds of sizes depending upon the number of bunches as well as the ideas of the grower of the vegetable and the manufacturer of the package. Packages shipped from the South Lima, N. Y., district were all more or less similar. A crate 24 inches by 22 inches by 20 inches was seen probably oftener than any other. Square crates were also common, especially for the celery shipped from California. The size of these square crates was anywhere from 20 to 24 inches in each dimension.



The number of dozen bunches contained in a crate varies considerably, with some as many as fifteen dozen bunches, but about seven and one half dozen bunches, is a good average.

The stave bushel and one-half bushel baskets are used occasionally. These baskets, however, are not very popular because celery cannot be shipped in these for any considerable distance. They are used exclusively by growers who are within hauling distance of the market.

The dimensions of two flat crates which are shipped from California and which appear quite frequently on the Eastern markets are: 24 inches by 11½ inches by 11½ inches, and 17½ inches by 16 inches by 5 inches.

### CORN

Corn is almost always sold by the ear and the price therefore is regulated by the content of the package used.

Heavy burlap sacks are very frequently used for corn. The content is almost invariably 100 ears.

The bushel hamper and fractional bushel baskets are convenient and much used.

Crates of varying sizes are used. One of the commonest is 24 inches by 12 inches by 12 inches. Some other crates used for corn are: 32 inches by 12 inches by 12 inches; 34 inches by 17 inches by 17 inches; 22 inches by 14 inches by 12 inches.

Bushel boxes are seen more or less frequently, especially upon the smaller city markets. The dimensions of some were: 19½ inches by 10½ inches by 10 inches; 18 inches by 12 inches by 10½ inches. These boxes were generally built with slats on all sides. Solid wood bushel boxes were used occasionally.

### CUCUMBERS

The bushel hamper is a very common receptacle for marketing cucumbers. Fractional bushel baskets are also quite common. A considerable portion of the cucumbers from the Delaware, Maryland, New Jersey, Ashtabula, and Marietta districts is marketed in this style of container. That is true for Eastern as well as Middle State markets. Several hampers of greater than a bushel capacity are occasionally met with, especially among Southern shipments. A so-called long hamper is used by Florida growers. It is 22 inches by 14 inches by 11½ inches and holds 50 pounds. Another size is 39 inches by 16 inches by 9 inches. The last two figures in both cases refer to the top and bottom diameter respectively. The first figure is the height.

Barrels of standard and smaller sizes are seen very frequently in connection with cucumbers.

The Boston box is the most generally used package for hot-house cucumbers. It is 18 inches long, 18 inches wide and 8 inches deep. The ends are of one piece and are three-quarters inches thick. The sides and bottom are of two pieces and are one-half inch thick.

Early and fancy cucumbers sometimes appear in bushel boxes. The dimensions of these boxes vary considerably. Twenty inches by 10 inches by 10 inches

was one of the commonest sizes. Some boxes are closed entirely while others are made with slats a quarter of an inch thick on the sides. Fractional bushel boxes are sometimes used. The dimensions of the two-third bushel box are 20 inches by 8 inches by 11 inches. The dimensions of the one-third bushel box are 21 inches by 8 inches by 5 inches.

### EGGPLANT

The bushel hamper is quite generally used for marketing eggplant. Fractional bushel baskets, especially the five-eighth bushel basket, are commonly seen in this connection. Baskets of greater than a bushel capacity are frequently used. Of this type basket, the  $1\frac{1}{2}$  bushel basket is the most common. This basket is  $19\frac{1}{2}$  inches deep, with a top diameter of 17 and a bottom diameter of 11 inches.

Barrels are a fairly popular style container for eggplant. This is especially true of the smaller than standard size barrels.

Bushel and one-half bushel chip baskets are used to a small extent. The dimensions of the latter which is the commoner of the two are  $7\frac{1}{2}$  inches high and 14 inches in diameter.

The bushel box is sometimes used for eggplant. The dimensions of a typical box for this purpose are 20 inches by  $10\frac{1}{2}$  inches by 10 inches.

Crates are rarely used. Eggplants grown in Florida were seen in a crate 22 inches by 14 inches by  $11\frac{1}{2}$  inches.

### KALE

Kale is almost always sold by the barrel. By far the greater part of the crop is handled in this style container.

Bushel hampers and fractional bushel baskets are used more or less frequently.

### KOHLRABI

Kohlrabi is usually handled in barrels. The sale is generally completed on basis of the number of dozen contained.

Bushel baskets and fractional bushel hampers are occasionally used.

### LETTUCE.

The bushel hamper is used frequently in connection with lettuce. It is the favorite package for the smaller growers of lettuce who are situated within easy access of the city markets. Lettuce of high grade from distant points is rarely marketed in bushel hampers, though this package is much used for the ungraded and low grade products.

The five-eighth-bushel basket is used generally by local growers in the vicinity of Philadelphia.

Lettuce crates are much seen on all Eastern markets. The dimensions vary considerably. A crate holding two dozen large heads of lettuce is usually 20

inches long,  $16\frac{1}{2}$  inches wide and  $8\frac{1}{2}$  inches deep. If the heads are smaller the depth of the crate may be eight inches, or  $7\frac{1}{2}$  inches, or even 6 inches. Some other dimensions of two dozen crates are: 18 inches by 17 inches by  $7\frac{1}{2}$  inches; 22 inches by 15 inches by 8 inches. The variation in the sizes of vegetable crates is due primarily to the variation found in the sizes of the vegetables themselves, and secondarily, to the varying demand of sizes among the growers. The dimensions of the three-dozen crates show a variation similar to that found in crates of two-dozen capacity. Some common dimensions of crates holding three dozen heads are: 20 inches by 17 inches by 14 inches; 22 inches by 18 inches by 12 inches; 20 inches by 18 inches by 12 inches. These crates are used for fancy grades of lettuce and are shipped from the large lettuce-growing centers.

The Boston box is found on nearly all eastern markets. It is used almost exclusively for marketing hot-house lettuce. It is 18 inches long, 18 inches wide and 8 inches deep. The ends are three-quarters inches thick and the bottom one-half inch thick. The ends are composed of one piece, and the sides, of two pieces.

The round stave basket is occasionally used for lettuce. The size holding one-half bushel is seen most frequently. The diameter of this basket is 14 inches and the depth is  $7\frac{1}{2}$  inches. The full bushel basket of this same type is also used.

Hamper baskets of 28- and 40-quart capacity are sometimes used by local growers. The 28-quart basket has a depth of 18 inches and the upper diameter is 15 inches and the lower diameter is 8 inches. The 40-quart basket has a depth of  $19\frac{1}{2}$  inches and the upper diameter is 17 inches and the lower diameter is 11 inches.

A slant-sided crate appears on the New York market. It is 24 inches long and eight inches high. It is 18 inches across at the top and 13 inches across at the bottom. The amount contained varies with the size of the heads. Some New York State and Long Island growers use this style of package.

The barrel is occasionally used for lettuce. However it is used chiefly to handle an inferior and cheaper grade of lettuce.

## ONIONS

The bushel hamper and fractional bushel baskets are frequently used for marketing onions.

Onions are more often sold in bags. A strong, heavy burlap is most generally used. The capacity of the sacks is usually 100 pounds, although sacks holding 68 pounds are frequently seen.

New Jersey and Long Island yellow and red onions are often marketed in barrels.

Bushel boxes are occasionally used for onions. The dimensions of the New York City Approved Bushel Container are  $19\frac{1}{2}$  inches by  $10\frac{1}{2}$  inches by 10. The side slats are three-fourths inches thick and are placed three-fourths inches apart. The small white onions are most frequently seen in this container.

The Spanish onions usually come in heavy crates. The dimensions are 38 inches by 11 inches by  $14\frac{1}{2}$  inches. The crate is divided into three compartments. Heavy rope is wound round the crate. Southern onions are shipped in a crate with these dimensions: Top, 22 inches by 14 inches; bottom, 22 inches by 12 inches; and the crate is 5 inches deep. A one-half bushel box, 14 inches by  $5\frac{1}{2}$  inches by  $16\frac{1}{2}$  inches, is frequently used for Southern onions.

## PEAS

The bushel hamper and fractional bushel baskets, as well as stave baskets and hampers with greater than a bushel capacity, are very frequently used for marketing peas.

The standard barrel and the smaller-size barrels are also quite common on all Eastern markets.

A burlap bag made of strong and heavy material is used rather freely in connection with the handling of peas. The capacity of these sacks is usually one hundred pounds, although sacks of 68 pound capacity are not infrequent.

The climax basket, described in connection with cantaloupes, is often used for handling early and fancy peas.

The standard 32-quart berry crate is occasionally used for peas.

## PUMPKINS

Pumpkins are almost invariably sold by the barrel. The only other common way of handling them is in baskets of bushel or even greater capacity in which case the price is determined by the number of pumpkins contained.

## RADISHES

Radishes almost invariably are bunched. This accounts for the fact that no standard package is used. The price of sale is always governed by the number of bunches and not by the capacity of the container. The use of the barrel is a usual exception to that statement. Standard and fractional barrel sizes are used.

The bushel hamper and the various fractional bushel basket sizes are quite frequently used.

The Boston box is used for hot-house radishes and early out-door growths on some of the Eastern markets. The dimensions of this package are detailed under the discussion of lettuce.

The standard 32-quart berry crate is used occasionally. The price is generally governed by the number of bunches contained.

## RHUBARB

The bushel hamper and the fractional bushel baskets are common carriers for rhubarb or pie plant as it is commonly called.

The barrel is also used freely, especially when the rhubarb is bunched which it most frequently is.

Bushel boxes are sometimes used. A box of one and one-half bushel capacity is used considerably in connection with the California crop. Its dimensions are 24 inches by 11½ inches by 11½ inches and it holds about 72 pounds.

## RUTABAGAS

The most generally used carrier for rutabagas is the barrel. It is found on practically all of the Eastern markets for handling this crop.

Bushel hampers and fractional bushel baskets are used to a slight degree.

## SPINACH

The bushel hamper and fractional bushel baskets, as well as stave baskets and hampers with greater than a bushel capacity, are quite commonly used for marketing spinach.

The barrel is without doubt the standard package for spinach. One sees more barrels used than probably all other style packages combined. The standard size, as well as the fractional barrel, is frequently seen.

The standard 32-quart berry crate is occasionally used for spinach.

## SQUASH

Squash are most generally handled in barrels. This is chiefly due to the fact that the price is determined by the number of dozen. Squash are almost invariably listed as so much per dozen. Another reason to explain the popularity of the barrel is the great variation in size common among squash.

The bushel hamper and other fractional bushel baskets are used in varying amounts on different markets. The one-half-bushel chip basket, described elsewhere, is quite common in connection with the appearance of the first home-grown squash.

A crate 34 inches by 17 inches by 17 inches is occasionally used for Southern grown squash.

## TOMATOES

The bushel hamper and the five-eighth-bushel basket are very commonly used for marketing tomatoes. All of the fractional bushel baskets are used at different times on all of the Eastern markets. The diminutive two-quart basket is sometimes brought on the market with the earliest of the home grown tomatoes.

The bushel box, with side and end slats, is frequently used. The dimensions vary. Twenty inches by 10 inches by 10 inches is a frequent size. Another common size is 17 inches by 13 inches by 11 inches.

The four-basket crate is occasionally seen. It is  $21\frac{1}{2}$  inches long and  $4\frac{1}{2}$  inches high. The width of top is  $13\frac{1}{2}$  inches and the width of bottom is  $11\frac{1}{2}$ . The capacity is 55 bushels. The six-basket crate is 22 inches by 14 inches by  $11\frac{1}{2}$  inches.

Crates coming from South Jersey measured  $17\frac{1}{2}$  inches by 11 inches by 9 inches. These crates hold 26 quarts.

The standard 32-quart berry crate is used more or less on most city markets.

On some markets tomatoes are sold, to a large extent, by weight.

## TURNIPS.

Turnips are generally considered as a bunch crop. This is especially true of early and small-sized turnips.

The bushel hamper and the fractional bushel baskets are very frequently used for marketing turnips.

The standard and smaller sized barrels are a popular container for turnips.

Heavy burlap bags of a hundred-pound capacity are common on most city markets as a carrier for turnips.

Bushel capacity boxes, the dimensions of which have been previously gone into, are used with more or less frequency.

The standard 32-quart berry crate is occasionally seen used in connection with the marketing of turnips.

SELECTED SECTIONS OF A PROPOSED STATUTE CREATING A DEPARTMENT OF MARKETS IN THE CITY OF NEW YORK AND AUTHORIZING THE MARKET COMMISSIONER TO LICENSE PUBLIC AUCTIONEERS AND ESTABLISH A PUBLIC INFORMATION BUREAU

THE DEPARTMENT OF MARKETS

SEC. 1163. The board of estimate and apportionment may, in its discretion, establish a department of markets. The head of the department shall be the commissioner of markets. He shall be appointed by the mayor after his salary shall have been fixed and money provided therefor in pursuance of law. The commissioner of markets shall appoint and may remove such deputies and employes as may be provided for by law. . . .

SEC. 1165. From and after the appointment of the commissioner of markets the department shall have control of all public markets, market places and market lands of the city. The commissioner may grant, transfer or revoke permits to sell in such markets or upon such market places or lands. . . .

SALES BY PUBLIC AUCTIONEERS

SEC. 1166-b. Meat, fish or vegetables may be consigned directly to the market department to be sold by auctioneers licensed by the market commissioner for sale at vendue or auction, and shall after receipt be so sold as soon as possible, but the city of New York shall not be liable for loss or injury of any such consignment or part thereof. The market commissioner, upon such terms as he shall fix, shall provide space and accommodation for the care of all such consignments to a market, as defined by section eleven hundred and sixty-six of this act, and book entries of the receipt and sale thereof shall be made by the auctioneer, showing the name of the consignor, the name and address of each purchaser or purchasers of any part thereof, and the amount or amounts received therefor. The auctioneer shall deduct all proper charges against such consignment and his commission, as fixed by the schedule established by the rules and regulations of the department of markets, and he shall thereupon transmit the balance of the proceeds of such sale or sales to the consignor; provided that nothing herein contained shall confer on the market commissioner the right to fix the charges or commissions of any person, persons, corporation, partnership or association doing business at a private market.

INSPECTION OF CONSIGNMENT

SEC. 1166-c. The commissioner shall, on the request of the consignor, consignee or carrier of goods, and the payment of the appropriate fees prescribed in the rules, order and direct such goods to be examined by an officer or employe

of the department who shall certify to the condition of same at the time of such inspection. The certificate of inspection shall be filed in the department. The department shall issue, on request and payment of the appropriate fees prescribed in the rules, certified copies of any such certificate of inspection.

#### INFORMATION BUREAU

SEC. 1166-d. The Market Commissioner shall organize and maintain a Bureau of Information for the use and convenience of producers and consumers and for general information as to the supply of and prices for meat, fruit and vegetables and such information tending to facilitate and cheapen food distribution in the city of New York, as the Commissioner shall deem it expedient to disseminate.

#### LICENSING MARKET AUCTIONEERS

SEC. 1166-e. The market commissioner shall have power to grant licenses to any person engaged in the business of auctioneer of meat, fish or vegetables at a market as defined by section eleven hundred and sixty-six of this act, or desiring to be so engaged, on the payment by such person of a license fee of one hundred dollars per annum and filing a bond, to be approved by the Commissioner, with two good sureties in the penal sum of ten thousand dollars. No auctioneer licensed under the provisions of this section shall be personally interested, directly or indirectly, in the sale of meat, fish or vegetables, except as auctioneer and to the extent of his legal fees and charges as such.

## THE CENTRALIZED VERSUS THE DECENTRALIZED FOOD MARKET

HENRY HODGES, *Harrison Fellow, University of Pennsylvania.*

Distribution with its increasing, and, be it hoped, partially unnecessary cost, presents itself as of prime importance in any country after the first stages of internal development have been worked out. The cost of distribution is no longer a theoretical problem only; its daily results have awakened all classes. Mr. J. A. Everitt of Indianapolis, Ind., President of the Farmer's Society of Kansas City, Kansas, made the assertion before the annual meeting of that body, that it cost 60 cents to distribute 40 cents' worth of grain. Leaving out of account the accuracy of this statement, it does give an idea of the seriousness, as well as the universal interest, in the present cost of distribution.

A mutual understanding of the limitations of a "market" is a prerequisite to the consideration of any of its problems. The term is very elastic, one extreme representing a small limited area, while the other, with the modern means of communication, embraces the civilized world. The market, as dealt with in this work, which considers wholesale food distribution, lies between these extremes. For instance, in weighing the advantages and the disadvantages of the decentralized food market, Philadelphia may be taken as a type, although that city itself is a distributing point for a large surrounding country, and in this sense is a centralized market for that larger district. Within the city itself, the question as to the relative value of the centralized and the decentralized markets for wholesale distribution of food products may be studied.

Centralization, in connection with a market, means, of course, distribution from a central point, while decentralization refers to distribution from several scattered points, the relative sizes of the markets being immaterial so far as this distinction is concerned.

In cities of smaller population (5,000 to 100,000) the food market is almost invariably centralized and rightly so, but this market also often forms the distributing point for a radius of from ten to fifteen miles. It is the efficiency of this larger reach that is subject to inquiry in the case of the smaller unit.

At first thought it seems to the layman, not especially interested in the distributing agents, that the question of the centralization or the decentralization of the food markets is one of easy and definite solution. The individual with more intimate knowledge of the subject, the result of experience or study, is more loath to arrive at a general conclusion. There are, invariably, so many factors entering into the food market problem that the fact becomes increasingly evident that the several general observations must be applied to the given locality, and the conclusion reached will apply to that particular set of circumstances.

Many writers on transportation problems have assumed the practicability of either the centralized or the decentralized food market, as either assumption seemed best to fit the results in mind. With some the growing tendency toward



suburbanization points inevitably to decentralization.<sup>1</sup> To this class it seems best that the railroads should "perform as much of the transportation service as it can, and bring the freight in as near as possible to the point where the consumer wants it."<sup>2</sup> Again, we are told that "the employment of a series of local depots from which and to which freight could be drawn in regular freight service from a central clearing yard, appears imperative, as it affords a basis for primary division and circulation of inbound consignments, and establishes a unit area within which a subordinate circulation can eventually be maintained."<sup>3</sup>

On the other hand, some railroad men—not the majority—are firm believers in the "economy" of tonnage concentration, the direct saving, of course, being railroad economy. These contend that savings to the railroad mean savings to the consumer. The benefit is indirect.<sup>4</sup>

That there are corrections to be made in the distributive processes no one will deny. For instance, why do strawberries go from Selbyville, Delaware (the largest strawberry shipping point in the United States), to Philadelphia (104 miles), be resold and go back over the same track as far as Wilmington, Delaware (27 miles), to be hauled to the storage house of the commission man, again sold and hauled by huckster's team fourteen miles to reach the consumer at Kennett Square, Pennsylvania? Any quality left in the berries after the last leg of this roundabout journey is due rather to the providence of God than to the wisdom of man.

The Pennsylvania Railroad touches all the points mentioned in the example cited above. The railroad charges 45 cents per hundred pounds for strawberries from Selbyville, Del., to Kennett Square, Pa., for both carload and less-than-carload lots, with the advantage to the large shipments (12,000 lb. minimum) of guaranteed refrigeration. Small shipments, sometimes, by virtue of their combining for the same route to make up the minimum, enjoy the same advantage. All berries travel by fast freight in ventilated cars. The rate from Selbyville to Philadelphia is the same as the Kennett Square rate, viz., 45 cents. The rate from Philadelphia back to Wilmington is 22½ cents. As a matter of fact, a large part of the berries shipped from Philadelphia to Wilmington go by express at a still higher rate. The actual cost to the huckster for carrying the berries from Wilmington to Kennett Square (14 miles) is approximately 45 cents per hundred pounds gross. Thus, not counting loss in quality, there is the absolute loss to the consumer of 67½ cents per hundred pounds. This amount does not take into consideration the profits added by the commission men of Philadelphia and Wilmington. Kennett Square is a town of about 3,000 population, 34 miles from Philadelphia. It is capable, with other towns on that division, of using carload lots of berries in the height of the season.

Mr. William G. Williams of Selbyville, the largest berry buyer in that town for the past twenty-five years, says, that the present route of strawberries from his town to Kennett Square, with the transfers incident to that trip, subtracts from 25 per cent to 35 per cent from the value of the berries. Thus, at an advanced

<sup>1</sup> See "Electrification of Railway Terminals," R. R. Donnelley & Sons Co., Chicago, 1908.

<sup>2</sup> "The Railway Terminal Problem of Chicago," Chicago, 1913. From the address of Mr. Hale Holden, p. 7.

<sup>3</sup> "The Railway Terminal Problem in Chicago," p. 62. From the address of Mr. Wm. Drummond.

<sup>4</sup> For example: "The City Freight Station and its Small Shipments," by C. D. Trueman, *Railway World*, Feb., 1913, p. 109.

cost, one obtains an inferior product after waiting a longer time than necessary, merely to add complexity to the system and employ more men.

Since the natural growth of food distribution has produced such unnatural results, it seems that it is high time to study the conditions of the individual markets, in the hope of arriving at a few rules that will admit of general application. It would seem best to apply these generalizations to the specific market under consideration and attempt to arrive at a conclusion for that market, and not assume, that centralization or decentralization is, of itself, superior under all conditions.

### THE MEDIUM-SIZED MARKET

The area of the centralized market is, from the nature of the case, greater than that of the decentralized. Another axiomatic fact is that there is a limit to expedient centralization, even granting that there are sufficient virtues in that plan to warrant its adoption in any case. The report of the Mayor's Market Commission of New York City, which extolled the efficacy of centralization, called attention to the fact that there is a limit to the size of the centralized unit, and, adapting their recommendations to this conclusion, advised individual markets for each of the five boroughs. The contention was that each borough formed a market in itself. The Commission realized that it was a physical impossibility to serve a city of the size of New York from one food market.

Mr. A. K. Pond recognized the same limitation when, in his address before the commission considering the railroad terminal problem in Chicago, he said, "As Chicago grows from a city of two and one-half millions to one of from four to seven millions, it is perfectly obvious that more than one business center and perhaps more than one civic center will be required."<sup>1</sup> These recommendations are all from authorities upholding, in principle, the centralized scheme of distribution.

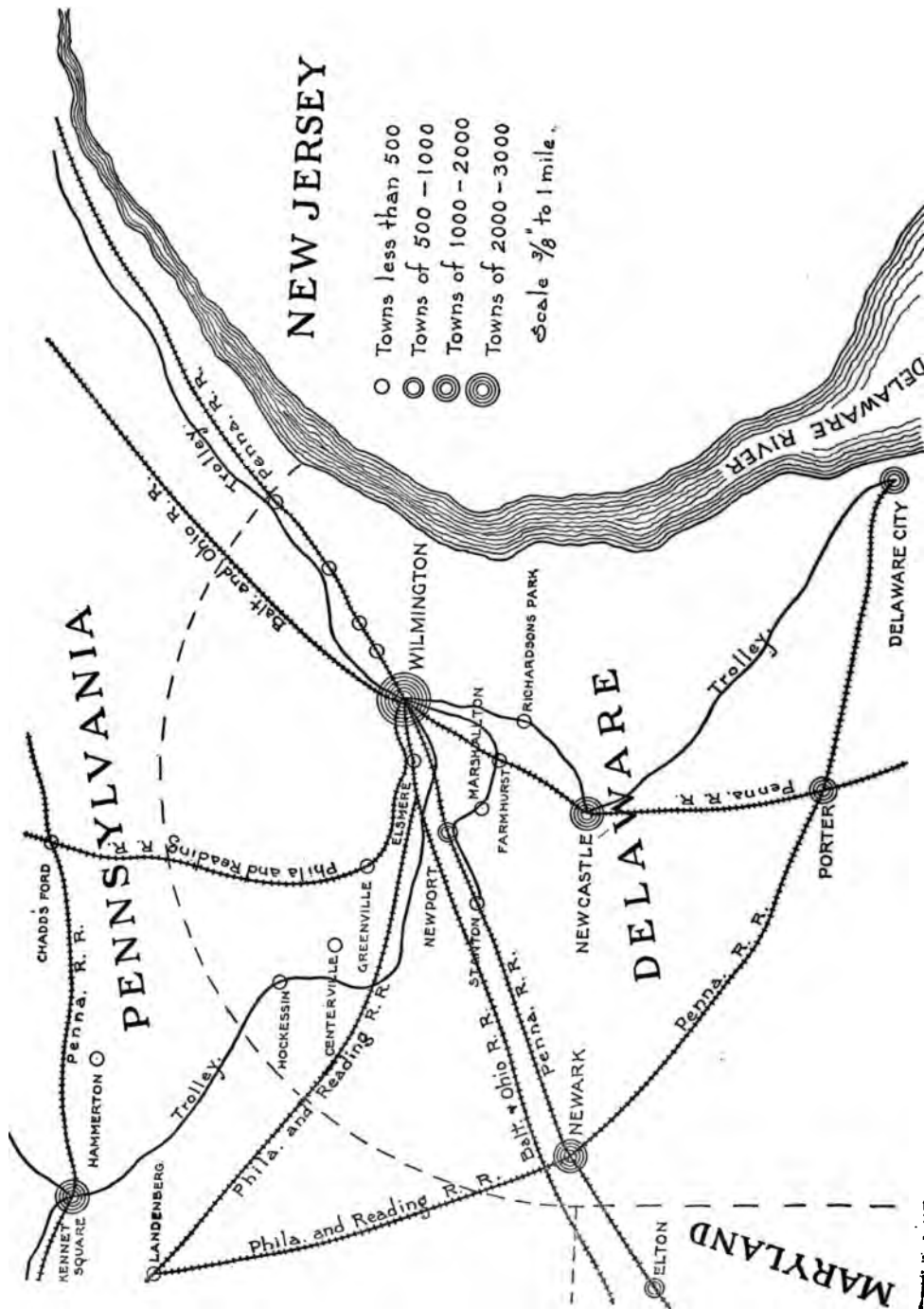
It has been suggested<sup>2</sup> that, contrary to the general belief, medium-sized central markets serve a radius of from ten to fifteen miles.<sup>3</sup> Wilmington, Delaware, a city of approximately 90,000 population, may be selected as an example to point out the extent of this service. The layout of this market is given on the accompanying map (p. 60). It will be noted that among the surrounding towns which depend mostly upon Wilmington for their food supply are five of over 1,000 population, three of the five having a population of over 2,000. In every one of these five cases the town is situated on the Pennsylvania Railroad and enjoys precisely the same freight rates as does Wilmington, its supply market, from the principal producing centers. For instance, on the arbitrarily selected food commodity, strawberries, the freight rate is 45 cents from its principal production center (Selbyville, Del.) to the five outlying points as well as to Wilmington.

It must be noted that there is no charge for switching cars at any of these points. Another interesting fact is that the freight rate on most food commodities, as is

<sup>1</sup> "The Railway Terminal Problem in Chicago," p. 41. From the address of Mr. A. K. Pond (architect).

<sup>2</sup> See page 57.

<sup>3</sup> The Atlanta, Georgia, "industrial district," we are informed by the Freight Traffic Manager of the Central Railroad of Georgia, extends for a distance of nine miles, this distance being cared for by three separate and complete agencies.



the case with the example selected, is the same for carload and less-than-carload shipments. The larger shipments, however, have the advantage of guaranteed refrigeration. This advantage is more than offset when the food products have to leave the refrigerated temperature at the centralized market, and complete their travels under less favorable circumstances. Continuous ventilation, under "Blue Ball" regulations, to the smaller markets would produce far superior results. It is a fact established beyond all dispute, that a continuous temperature, even if injurious, is less harmful to food products than changes from ideal temperatures to the less desirable ones. It is *change* that plays havoc with food products, and especially with fruit.

The question naturally arises, how are the food products conveyed from the central market of the average size to the consuming towns? In the Wilmington district, which is a typical example in the East at least, the answer is the huckster, the trolley freight, and the auto freight service. In this case, by far the most important means is the huckster. The small automobile sometimes used for distribution to the consumer has little, if any, advantage over the horse and wagon. The per ton mile cost on the road is lower, but the cost per ton mile stop, which consumes equal time in both cases, is, on the average, more expensive for the automobile.

Some of the commodities are hauled by auto truck or trolley freight direct from the distributing point to the dependent town. In this case, however, there is another selling agency distinct from the hauling service, and therefore the cost of the haul itself is so much loss to the consumer. As a matter of fact it has been repeatedly demonstrated that the teaming huckster can undersell the decentralized food markets of the type under consideration.

Since the railroad freight rate on food products from the producing point is the same to the several consuming points noted on the map, it follows that the cost of delivery from the central distributing point, in the case of Wilmington, to the secondary markets served by it, is just so much additional burden to the consumer, whether this cost is represented by trolley freight, auto freight, huckster or additional railroad charges.<sup>1</sup>

As indicated in a preceding paragraph, the bulk of this service of distribution, as well as the selling of the commodity itself in the outlying districts, is performed by the huckster. For this selling service in the city of Wilmington (90,000 popu-

<sup>1</sup> Freight Rates on Strawberries from Wilmington, Del., to (Via Pennsylvania Railroad)

Delaware City, Del. ....	22½¢
Newark, Del. ....	10½¢
Kennett Square, Pa. ....	21 ¢
Newport, Del. ....	9 ¢
Stanton, Del. ....	10½¢
Edgemoor, Del. ....	9 ¢
New Castle, Del. ....	10½¢
*Elsmere, Del. ....	10½¢
Hollyoak, Del. ....	9 ¢
Claymont, Del. ....	10½¢
†Chadd's Ford, Pa. ....	21 ¢
Elkton, Md. ....	15 ¢
*Marshallton, Del. ....	16½¢

\* Includes a transfer to the B. & O. Better rate by the B. & O. direct.

† Has to go via Philadelphia. Better by B. & O.

lation) and the fifteen mile radius it serves,<sup>1</sup> embracing in all a population of approximately 105,000, peddler's licenses have been issued (1913-1914) to 131 teams.

The authoritative estimate of the number of teams doing no business whatever within the city limits is 46.<sup>2</sup> The average number of working days during the year is about 290—6 days a week for 38 weeks, and 4 days a week for the balance of the year. The average day's sale, computed from a number of actual trips under different conditions, was \$28.60. From these figures the annual sales of the hucksters covering the outlying districts amount to \$431,288.00. The comparatively unimportant services of the automobile and the trolley freight may be omitted from the report on this market. It might be well to note, however, the growing importance in this district of the trolley freight as a distributive agency.

The yearly expense of hauling and selling for the 46 teams employed in handling this half million dollars worth of business is, as nearly as can be computed, about \$78,779.60, or approximately 18 per cent.<sup>3</sup>

#### MARKETS DEPENDING ON WILMINGTON FOR FOOD SUPPLY

Market	Population	Distant	R. R.	T. F.	A. S.
Richardson's Park, Del. ....	325	3	no	yes	yes
Newark, Del. ....	2,500	12	P. R. R.	no	yes
Kennett Square, Pa. ....	3,200	14	P. R. R.	yes	no
Stanton, Del. ....	250	6	P. R. R.	yes	yes
Marshallton, Del. ....	200	6	no	yes	no
Newport, Del. ....	500	4	P. R. R.	yes	yes
Edgemoor, Del. ....	200	3	P. R. R.	no	no
Brookhaven, Del. ....	100	2	no	yes	no
New Castle, Del. ....	3,200	5	P. R. R.	yes	yes
Delaware City, Del. ....	1,700	14	P. R. R.	yes	yes
Elsmere, Del. ....	250	2	{ B. & O. P. & R.	yes	no
Hollyoak, Del. ....	300	5	P. R. R.	yes	no
Claymont, Del. ....	425	8	P. R. R.	yes	no
Chadd's Ford, Pa. ....	300	9	{ P. R. R. P. & R.	no	no
Elkton, Md. ....	1,325	15	P. R. R.	no	yes
Greenville, Del. ....	50	3½	P. & R.	no	no
Centerville, Del. ....	100	6	no	no	no
Hockessin, Del. ....	200	7	no	yes	no
Hammerton, Pa. ....	50	11	no	no	no

Total ..... 15,175

R. R. means "Railroad." T. F. means "Trolley Freight." A. S. means "Auto Service."

<sup>1</sup> Market Commissioner of Wilmington, Delaware.

<sup>2</sup> The average cost of a huckster wagon and one horse is \$160.00.

Interest on above investment at 6% .....	\$ 9.60
Shoeing, tires and repairs .....	32.00
Feed and stabling .....	168.00
Wagon depreciation .....	20.00
Horse depreciation .....	10.00
Insurance .....	9.00
Wages for first man @ \$2.25 .....	652.50
Wages for second man @ \$2.00 .....	580.00
Tobacco @ 40¢ per day (290 days) .....	116.00
County License .....	15.50

Total for one team ..... \$1,712.60

Total for 46 teams ..... \$78,779.60

Tobacco: All men are supplied with tobacco at the expense of the teamowner. From daily records of this expense 40 cents is a very fair average.

To this figure there must necessarily be added a profit which can be neglected since it is the last profit added and appears in any of the more usual forms of distribution. It is clear, however, that a large portion of this sum of almost \$79,000.00, to which must be added the transportation charges resulting from the auto-truck and trolley freight service, could be saved if the railroads were directed to land the products as near the consumer as their facilities permit.

Most all the evils of concentration that appear in the larger centralized markets are not present in the one under consideration. Moderate congestion occurs from 6.30 a. m. until 8 a. m. when the hucksters are buying from the commission men. The average number of one-horse teams counted in two squares, at 7 a. m., during the month of July, was 59. Congestion was worse than necessary due to lack of order in the teaming arrangement. The hucksters' teams are on their routes before the commercial hauling of this district begins.

This wholesale market is on the edge of the business district and could be moved with ease should necessity demand. The commission houses are of moderate size so far as volume of business is concerned, and business transactions are reported as generally satisfactory. The market is not so large but that adequate regulations for reasonable cleanliness can be enforced without difficulty.

In a centralized market of this size it is the consumers in the outlying districts who suffer through social waste. The central market type of which Wilmington is an example suffers from few of the drawbacks attributed to the larger distributing points.

So far as the secondary markets in this area are concerned, most of the disadvantages attributable to the decentralized market, in principle, would not apply; especially those directly affecting the consumers and the food products. The disadvantages to the railroads, in respect to increased labor, freight car and station facilities, would be concretely appreciable.

Considering the other disadvantages of decentralization, one cannot but conclude, in the first place, that, although cost prices would tend to be a little higher, due to the limited demand, the selling cost would, on the other hand, be materially lessened.

Storage facilities, in consequence of cheaper land values, lower taxes, etc., could hardly be noticeably higher than at the central supply point, especially if operated in connection with another business as would necessarily be the case.

Storage on seasonal food products is for very brief periods, generally, and requires refrigeration or cold storage. The installation of a unit plant, contrary to the general opinion, is not a prohibitive financial undertaking for a small market.<sup>1</sup> Although a system of brine coils would be impracticable for most of the decentralized markets under consideration, cold storage could undoubtedly be supplied at these points, and at a profit, for rates which would compare favorably with those at present levied at the central market.<sup>2</sup> The necessity for cold storage would not be so strongly felt in the outlying towns.

<sup>1</sup> This subject is considered more fully on page 108.

<sup>2</sup> Present charges for cold storage at the Wilmington Abattoir and Cold Storage Co., are:

$\frac{1}{2}$ bu. basket for 24 hours.....	5¢
1 bu. basket for 24 hours.....	10¢
1 barrel for 24 hours.....	10¢

Other rates are in proportion.

In view of these facts it would seem that in this particular case the dependent markets would lessen their food cost by forswearing their allegiance to the central market and dealing direct. This example may be representative of a type working under similar conditions, and still the results of its experience would not point out, inevitably, the course to be followed by every other member of its group.

### THE LARGER MARKETS

In the foregoing discussion of the medium-sized market, the principal considerations were the condition of the food products and cost to the consumer. Congestion did not form a vital part in this market. In the larger markets—above 300,000—congestion becomes one of the most serious problems. A full discussion of street and terminal congestion in its economical and political relations to shipper, railroads, consumer, civic development and the numerous other interests it affects, is impossible within the limits of this report, but a brief consideration of these relationships is imperative.

It may be accepted as universally true in the case of the larger market that by far the greater part of its food supply reaches the city by means of the railroads. The internal distribution may or may not be partially performed by the railroads. In the City of Newark, New Jersey, it was found that during the summer months about two-thirds of the food products enter by the railroads, the other third being brought in by the farmers' wagons. The amount brought in by the railroads during the "eight or nine winter months" was between eighty and ninety per cent.<sup>1</sup>

The task which the railroads are called upon to perform becomes surprisingly larger each year, in many cases out of all proportion to the increase in the population. Between 1850 and 1897 the potato business increased 331 per cent, the butter business 323 per cent, while the fruit business shows the remarkable growth during these 47 years of over 2000 per cent.<sup>2</sup> The increase in the total population of the country during the same period was 270 per cent.

To relieve this consequent congestion at the larger markets has been one of the most trying problems of the experts on that subject. Mr. John F. Wallace, the expert retained by the City Council of Chicago to solve their terminal problems, points out one of the causes of this congestion to be as follows: "A great deal of the congestion of the streets in the business district of the city is due to the handling of freight which is foreign to the city, and which could with advantage to the community be handled outside of the business district."<sup>3</sup>

Much of the value of this suggestion depends on the meaning of "foreign." If "foreign" goods has reference to goods whose ultimate destination for consumption is other than the city of Chicago, but which is billed to Chicago merchants, then the suggestion would seem to point to wholesale warehouses located at some point other than in the business district, in which section only the office work would be transacted. This meaning of the word seems to suggest an entirely feasible plan but exempts the railroads from any connection with this cause of congestion.

<sup>1</sup> "Market Report, Newark City Plan Commission," 1912. Supplement No. 3, p. 7.

<sup>2</sup> Fairchild, "Rural Wealth and Welfare," II, New York, 1900.

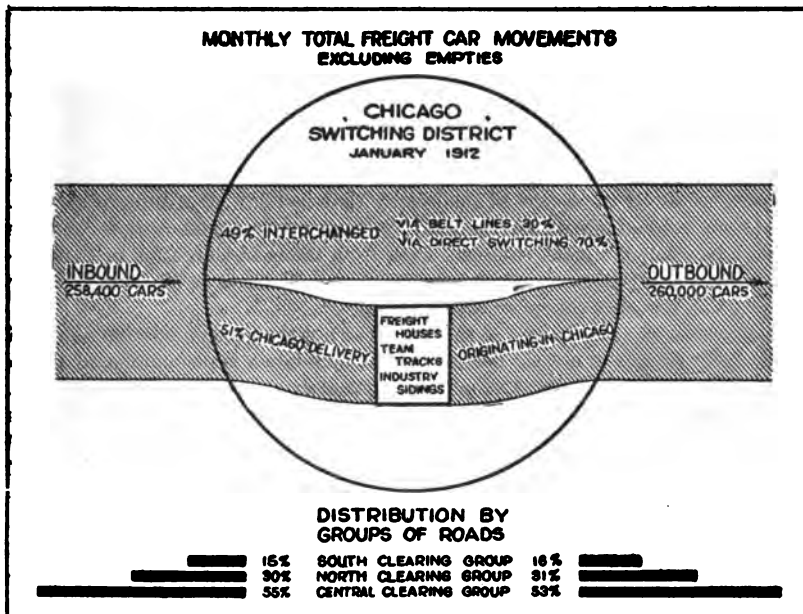
<sup>3</sup> Report of J. F. Wallace to Committee on Railroad Terminals of City Council of Chicago, p.

If, on the other hand, "foreign" products refers to products really consigned to some point outside of Chicago, but sent through or into that city for transfer, make-up or distribution purposes, then the railroads are partially to blame at least and it will be interesting to note their defense in this connection.

One eminently qualified to give opinions on railroad matters writes: "At the largest cities it is not the case that any congestion in central terminals results from the non-separation of local from foreign goods (by 'foreign' I suppose you mean goods not intended for that city) as the foreign goods are not likely to move into the city stations, so that I believe the present method takes care of the situation."<sup>1</sup>

Another opinion upon the same subject is exactly contrary in character: "The separation can be made and is now made at many cities, but this separation will not necessarily prevent congestion at the city stations."<sup>2</sup> It was, of course, not contended in the original suggestion, that the elimination of one of the causes would eliminate the effect.

The most recent facts in the case of Chicago are given graphically by Mr. Bion J. Arnold in his report to the Citizens Plan Committee.



#### LOADED FREIGHT CAR MOVEMENT.

Showing graphically the proportion of in-bound and out-bound freight, 49% of which is interchanged between roads. Note the fact that, of the total freight interchanged, 70% is handled by direct switching within the city limits.

<sup>1</sup> Source withheld.

<sup>2</sup> Source withheld.



It is to be hoped that most of this congestion in Chicago will be taken care of in the new "Clearing" constructed for that purpose. An example of the results of these congestive methods in Chicago is offered by Mr. George E. Hooker, Secretary of the City Club of Chicago: "The freight performances of the Chicago railroads are still more deficient. (Referring to cities other than Chicago.) Three full days are now required, on the average, to get a freight car through the Chicago district, and a very large amount of less-than-carload freight has to be transferred from one line to another by being carted through the streets downtown—a serious operation and financial handicap to commerce."<sup>1</sup> Suggested methods of relief will be considered later.

A reasonable understanding of the larger market requires a separate consideration of the few of its more important problems among which are the outer station, centralized delivery system, and several other features peculiar to food markets—as, for instance, organization, storage and refrigeration facilities.

### OUTER STATION

Decentralization within the large cities, so far as the railroads are concerned, is accomplished by what is commonly known as the outer station. This is the method employed for bringing the products as nearly as possible to the consignee. The value of this service to the particular consignee depends altogether on his distance from the central freight station. In some instances where the distance is great enough the outer station means a great saving, whether the quantities of freight involved be less-than-carload or carload.

It is unnecessary to attempt to prove that the railroads can haul at a lower ton mile cost, whatever the nature of the freight, than can any other form of cartage. An Eastern railroad official asserts that, "it frequently costs 50 cents to 75 cents to cart a package or a small shipment to or from the railroad station in Philadelphia, while the revenue received by the railroad is 25 cents or 30 cents." How much of this cost can the outer station save?

The question has been raised as to whether or not the accommodation rendered by the outer station to certain portions of the population is not purchased at too great an expense, the whole of which falls ultimately on all the consumers. Mr. C. D. Trueman, in a detailed and interesting article in the *Railway World* presents some of the facts respecting less-than-carload quantities in a city of about 600,000 inhabitants. In this city there was one distributing and collecting station and five other sub-stations situated in as many different commercial centers, a condition which represents a well decentralized system for distribution. "That portion of this complement of stations and accompanying tracks, which is devoted to less-than-carload quantities of freight, occupies an aggregate of 521,000 square feet of ground, valued at \$513,000.00. By adding to this the investment in structures, etc. . . . the total investment for less-than-car-load purposes is found to be, in round figures, \$1,020,000.00. This computed on a 5 per cent interest basis, against the tonnage actually loaded thereat, shows that each ton of freight passing through these stations costs the railroads in interest alone 15.05 cents."<sup>2</sup> He concludes that when necessary items of taxes, insurance,

<sup>1</sup> From the address of Mr. George E. Hooker, appearing in "Railway Terminal Problem in Chicago," pp. 82-83.

<sup>2</sup> "The City Freight Station and Its Small Shipments," February 1913, p. 107.

depreciation, and provision for reasonable business increase of the future, are added to the above, the amount will total 29.8 cents per ton.

This is a question for the individual to answer with the figures before him. Is 30 cents per ton too much of a burden on the whole body of consumers that one part may be saved a portion of its cartage expense and the other partially relieved of the congestion of the single terminal with its consequent disadvantages? The answer will depend, in the particular case under consideration, largely upon the cartage expense on the one side, and the disadvantages of the congestion on the other.

Under present conditions of private collection and delivery it is possible that circumstances force the outer station on the railroads in the case of small shipments. This opinion is very plainly expressed in the statement of an official of one of our best regulated systems. "Having established carload delivery stations, there is much room for argument as to the additional cost involved in handling less than carload freight thereat, and while doubtless the outer-station-less-than-carload freight practice is inimical to time in transit and economical handling, I am inclined to believe, even if all the rail carriers consolidated, that other competition, such as boats and trolley lines, would force the continuance of outer stations."<sup>1</sup>

The cost of handling in carload quantities is not so large, due partly to the fact that platform and housing facilities, as well as much of the human element, is unnecessary. In answer to the inquiry as to whether the amount of such freight justifies even the smaller proportional outlay Johnson and Huebner say that "not less than four-fifths of the freight traffic of our railroads is shipped in bulk in carload and train load lots."<sup>2</sup> The almost unanimous conclusion on this subject is well expressed in the following opinion: "In my judgment there could be no doubt of the benefit of outer stations for the receipt and delivery of carload freight on track, both in its economical relations to the costs of the shippers and receivers, and its avoidance of congestion of street traffic in the central portions of the city."<sup>3</sup>

The chief reason for the dissenting vote to the preceding proposition, as developed in the hearings before the Interstate Commerce Commission in the Five Per Cent Advance Case, is that the method used at present in the case of large concerns, of delivering direct on private switches, relieves the street congestion of the large cities to such an extent as to make unnecessary the outer station. The question of charges for this service on industrial spurs is left in the hands of the state, as are all switching charges when the service performed is local to the state.<sup>4</sup> Some state commissions have decided contrary to the opinion given by the Interstate Commerce Commission in the "Industrial Railway Case"<sup>5</sup> to the effect that a through rate to destination in the case of certain industrial railroads constituted a violation of the Interstate Commerce Act, in that, it was in the nature of a rebate.<sup>6</sup>

<sup>1</sup> Source withheld.

<sup>2</sup> "Railroad Traffic and Rates," I, 14.

<sup>3</sup> Source withheld.

<sup>4</sup> See Snyder's "Interstate Commerce Act and Federal Anti-Trust Laws," New York, 1906, p. 171.

<sup>5</sup> January 20, 1914. No. 4181.

<sup>6</sup> See Decisions of the Public Service Commission of Penna., 1914. No. 193.

## PRIVATE HAULING

vs.

## CENTRALIZED DELIVERY

The important question of the relative value of hauling from the freight station by private teams, as compared with a collection and delivery service by some centralized agency, railroad company or otherwise, has been given attention many times by writers well qualified to give information on the subject. Granted that the auto truck is the best means for large quantity hauls, and granted that the smaller business often finds the horse-drawn vehicle more economical, what are the disadvantages of this system as a whole that it has received such repeated attacks? The most serious offense is congestion, resulting from an unnecessarily large number of conveyances to deliver and collect the tonnage they take care of. The result is congestion in the neighboring streets, frequent waiting for every team served, and in many instances two or more teams going to or coming from the same locality partially loaded. One of the items of efficiency in teaming is the maximum load; and this ideal is unapproachable under the present system. The various individual routes are continually crossing each other, three or four teams often performing the work of one. The routing that would be possible under some centralized system of delivery would eliminate most of this social waste.

What advantage would the consignee derive from this centralized hauling service? In Baltimore, where the installation of such a system was forced on the railroad for the relief of congestion, the patrons of the railroad enjoyed prompt and regular collection and delivery without any of the annoyance incident to a private service. In this case the patrons were unusually fortunate in that there was no extra charge for the service.

What advantage does such a system offer to the railroads? Expense would most certainly be decreased, and it is only reasonable to suppose that the patrons of the company would, in time, enjoy a part of the savings. The need for station and platform facilities would be greatly lessened. Storage in freight stations would be eliminated. It has been estimated that fully 33 per cent of the freight housing facilities are required for holding shipments until called for. Many trucks could be loaded at the car doors, thereby saving, not only in physical structures, but also in handling, an item very important because of the high cost involved as well as its depreciating effects on foodstuffs, with which we are primarily interested. The depreciating effect on less-than-carload freight as a result of the present method of handling at the centralized terminal, and even at many decentralized terminals, although worthy of serious consideration, is not so tangible in its results as is the actual breakage and destruction. It is given as a positive fact by those who handle the figures in one of the freight stations at Reading, Pa., that the damage claims paid at that terminal amount to more than the wage account.

Another item of no mean importance, on which an interesting figure is given by Mr. C. E. Trueman, is that of postal card notification to the consignee by the railroads. This gentleman asserts that one prominent company operating in a city of about 600,000, spent \$4,000.00 annually for this purpose. This item would cease to appear under the collection and delivery system. It represents the price of two trucks with the capacity of the most economical unit.

Another prominent feature of saving resulting from the collection and delivery service is brought out in the discussion as to which is the proper capacity unit for general hauling, such as exists at the modern freight station. Majority opinion among the automobile truck salesmen, who have made a thorough study of the question, fixes the efficiency unit for general hauling at two tons. The mere fact, however, that there is a dispute as to this solution leads to further inquiry. The truth is that many large concerns, which can take care of most of their hauling with the two-ton truck, require one of larger capacity to take care of exceptional cases. They must either hire trucks for these exceptional cases or buy the truck that will take care of them, an explanation that accounts for most all cases in which a five-ton truck is doing the work of one of half that capacity. This waste would be eliminated in the centralized service, where a majority of the trucks would be of two-ton capacity, but where there would also be such a variety of work as to keep trucks of larger capacity efficiently employed.

Another very important element to be considered in connection with a centralized collection and delivery service, is the location of the railroad facilities. Since all sections of the city must be catered to under such a system, it serves no useful purpose to have the freight yard located in an expensive and congested section as is generally the case under present circumstances. With the new delivery system it might often happen that more space for handling the freight could be had at a much reduced cost and in a part of town more agreeable to all parties concerned, without in any way impairing the efficiency of the service.

Four questions must be touched on very briefly before the centralized cartage system may be said to have been given a "fair trial." (1) What is the relative cost to the consignee of the two systems? (2) Should the centralized system, if adopted, be optional or obligatory? (3) Should it be under railroad or independent management? (4) Should the drayage charge be listed as a separate item?

Accurate figures on the cost of private hauling are surprisingly difficult to obtain. The weight of the average package and other essential factors differ greatly with the various concerns. The average result of several accurate investigations on this subject, in cities of from 400,000 to 600,000, places the figure at about \$1.35 per ton.

As mentioned before, it was necessary for the Pennsylvania Railroad to provide for a collection and delivery service in Baltimore to relieve the congestion at that point. This system was in use for several years, being abandoned only about a year ago. The relief to the railroad was considerable and satisfactory, but it was finally decided that the relief obtained was not sufficient to compensate for the expense involved, the railroad not being allowed to shift any of this additional expense except by pursuing a very involved and unsatisfactory course. During the year ending August 31, 1913, about 72,500 tons of freight were handled under this system, at a cost to the Pennsylvania Company of about \$88,000.00, or approximately \$1.22 per ton. When this figure of \$1.22 is compared with \$1.35 of the present method it must be remembered that the former figure includes a regular business profit to the drayage company employed, while the latter figure is supposed to represent actual net cost.

The second question seems easily disposed of. Uniform volume of freight would be one of the chief factors making for a low cost of operation. Evidently,

if the service was optional, the consignees would suit their own convenience as to what they called for and what they had delivered. Such a mixed system would produce more confusion and possibly more expense than the present method. The practical result would be two systems in the place of one, each capable of taking care of almost the entire tonnage.

The question of railroad or independent management admits of more argument. If the railroads undertook the service what would be the result? The first requirement would be a new system of rates, published and sanctioned by the various railroad commissions. After a schedule was allowed that would be fairly remunerative to the railroads, competition would set in between the railroads and the private truckmen, with the result that the latter would be entirely deprived of the package freight business, a situation engendering strong opposition to the plan. This competition would run a peculiar course due to the fact that the railroads could change their rates only after a certain notice to the railroad commission (30 days in Pennsylvania) while private truckmen could take immediate advantage of commercial conditions. A number of railroad men have ventured the suggestion that the railroads would have a rate forced upon them that would not compensate them for an effective service.

The independent company would meet all changed conditions by immediate tariff adjustments, and could take care of all situations generally, provided that that company had an absolute monopoly of this business in the particular city in which it was operating. With two or more companies taking care of this tonnage, one for each railroad for instance, there would be an overlapping of zones and constant competition between the various railroads from different points, all of which the drayage companies would be compelled to take care of. One independent company in each city with absolute monopolistic powers with respect to that city seems to be a prerequisite to the success of the system.

This solution of the third problem makes the solution of the fourth relatively easy. The independent drayage concerns would, of necessity, make a charge for hauling, separate from that of the railroad transportation charge. Thus the schedule could include various zones and conditions which would, of course, be regulated to some extent by the commonwealth as is the case with all companies enjoying an absolute monopoly.

A prominent Eastern official, after concluding that the centralized delivery system was not feasible for the present, due to the peculiar relations existing between the railroads and the railroad commissions, remarks, "It will, however, have to be faced, I believe, in the more or less immediate future and seems to be the only possible alternative to expenditures for terminals in congested parts of the city at an expense which threatens to still further reduce any remuneration from the haulage of less-than-carload traffic."<sup>1</sup> Another official from the same city made this laconic reply:—"Think it desirable."<sup>1</sup>

It is a well known fact that this collection and delivery service has been performed by the railroads in England and some Continental countries with success for a number of years. It is not the intention to cite this example as a proof that the same method should be adopted in the United States where conditions are different.

<sup>1</sup> Source withheld.

## STEADYING INFLUENCE IN THE LARGE MARKET

An important factor in connection with the larger market, and a point distinctly in its favor, is the relative steady supply and demand. To the extent that this condition exists in any market, are producers and consumers benefited. The producer is assured a relatively permanent demand for his products, and the consumer is assured, under ordinary conditions, a continuous supply. Such conditions have an effect on prices. The producer prefers to unload his entire production at one market at a low price. Both parties share the benefit. \*

## FEATURES PECULIAR TO LARGE FOOD MARKETS

There are several features of no direct relation to each other that are peculiarly true with respect to food products and food markets, although they may figure to some extent in other markets also. Such, for instance, is the organization of the trade dealing in food products generally, and until very recently, if not at the present time, in the fruit trade in particular. Mr. F. A. Waugh in his very interesting work entitled "Fruit Harvesting, Storing, Marketing" after reciting many examples of the deplorable relations existing between the producers and the middlemen writes, "This organization of the fruit trade is certainly far from ideal. The shipper is completely at the mercy of the commission man. The whole bargain is on one side of the transaction."<sup>1</sup>

This was written in 1912. From talks with large food producers the fact becomes clear that present conditions are still subject to improvement, and that those who "can pick their company" deal with large houses with sound financial rating and a record for honest dealing. It is not so much "lost bills" as it is "cut bills." Unfair deductions before remitting to the producer is the main offense. In the largest commission houses, where a number of clerks and salesmen are employed, there is not so much chance for the "individual" treatment which results so disastrously to the producer. It is natural to infer that, as a rule, the largest houses would be located in the centralized markets where the greatest amount of business is transacted,—hence one of the advantages, to the producer at least, of the centralized market, and especially the large centralized market.

## WHOLESALE AUCTION MARKETS

The wholesale auction market, recommended for their respective cities by the New York and Newark Commission, is one way of reducing the number of business transactions between the producer and the commission man. This type of market aims to give fair dealing to all through its publicity, and has demonstrated its success in the citrus fruit trades in this country and in many cities in European countries. Since practical results have shown that the good which this type of market can accomplish increases with the enlargement of its scope, it follows that, as a general rule, the wholesale auction market is most efficient in the larger or centralized markets. \*

## ELECTRIFICATION

The electrification of railroad terminals in the larger markets, extending to the city limits, as it of necessity would be compelled to, would be a distinct point in favor of the decentralized food market in that city, provided some efficient centralized system were not already established. The voluminous report of the Committee of the City Council of Chicago on "The Electrification of Railroad Terminals" (1908) almost indisputably points out that electric freight handling is most efficient in handling less-than-carload freight for short distances. Electric freight handling results in exact spotting, less jolting, a more frequent schedule, and numerous less important and more indirect advantages. It is also contended that the service could be performed cheaper by electricity. These facts mean better handling of food products in large decentralized markets, as in Chicago and Philadelphia.

## STORAGE AND REFRIGERATION

\* It is unquestionably true that the centralized plan in a given market, so far as either storage or refrigeration facilities are concerned, would have an advantage over the decentralized system in that same market. The demand for such service being greater in the former case it is only reasonable to suppose that not only would the increased demands be catered to, but catered to more efficiently. Lower land and labor costs, and, very probably, smaller demand combine to keep the price for storage slightly lower per hundred weight, bushel or crate in the decentralized market. The cheaper help, poorer ventilation, and other differences generally make up for the lower costs, in cases where they exist. In refrigeration the difference between the two systems may be more marked. Cheap superintendence of a refrigeration plant, no matter what the facilities, is often very expensive to the market men, as many of them are too ready to testify.

Efficiency in refrigeration requires a number of rooms at different temperatures. The temperature that obtains the best results in the case of meats or fish will show discouraging results when used for keeping certain vegetables. Experts on the subject have ascertained by practice the best temperature for keeping the various food products.<sup>1</sup>

The temperature in any given room may be regulated by the installation of the proper number of feet of brine coils, and is generally so arranged that the same

<sup>1</sup> APPROXIMATE TEMPERATURES FOR STORING FRUITS AND VEGETABLES

Apples, summer.....	36-42 degrees F.
Apples, winter.....	32-35 " "
Pears, summer.....	36-44 " "
Pears, winter.....	33-38 " "
Peaches.....	36-38 " "
Plums.....	36-42 " "
Cherries.....	38-40 " "
Grapes.....	32-36 " "
Potatoes.....	36-40 " "
Cabbage.....	34-36 " "
Beets.....	36-40 " "

From "Fruit Harvesting, Storing, Marketing," p. 111.

room may be kept at different temperatures at different times, merely by the valve arrangement which reduces the number of feet of coils in operation. Hence two or three rooms may supply many different temperatures to accommodate seasonal products, a fact which lightens the burden of inefficiency of the small or decentralized market as compared with its larger rival.

### GENERAL CONCLUSIONS

The foregoing observations and conclusions suggest four general types of markets, roughly distinguishable from each other by their size and scope. The decision as to centralization or decentralization in the two markets representing the extremes of this division is comparatively easy. For the small markets (up to 100,000), not serving a large outlying district, centralization of the distributive functions for the food products is inevitably demanded by considerations of cost and service. For the abnormally large market, of which the city of New York may be taken as an example, centralization, in the strict sense of the term, is physically impossible. The great extent of such a city demands a decentralized market system within its boundaries.

The two types of markets lying between these extremes, representing a large portion of our population, are fields for more fruitful discussion. Cities with a population hovering about the 100,000 mark and even those whose population is double that number, are, under ordinary circumstances, best served by a centralized market system. The important fact to note in this connection, however, is that the boundaries of the food market which has such a city for its center, is not co-terminus with the political boundaries of the city itself, but of a much wider range. Observations made in this report prove conclusively that for this larger "market," decentralization is decidedly to the advantage of the outlying districts of that market.

The large markets, in general figures those whose population numbers upward from 300,000, present the most difficult problems as far as centralization or decentralization of their food products is concerned. In general, the facts adduced point to the following conclusions, so far as the cities themselves are concerned. Should electrification be adopted for any reason, by the railroads within the limits of the market, decentralization of the delivery system, so far as less-than-carload quantities are concerned, seems advisable. Should the particular market already have a centralized system located in a congested section, and economic or social reasons make a change of location necessary, as for instance to allow space for the development of the business district, centralization of the system for the distribution of less-than-carload quantities, in one of the less highly developed portions of the city, combined with a centralized delivery system, as outlined in the report, would seem advisable. In any case, as the testimony of railroad and business men point out, decentralization is the better method for the distribution of carload lots.



